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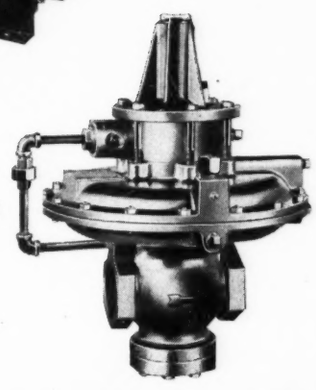

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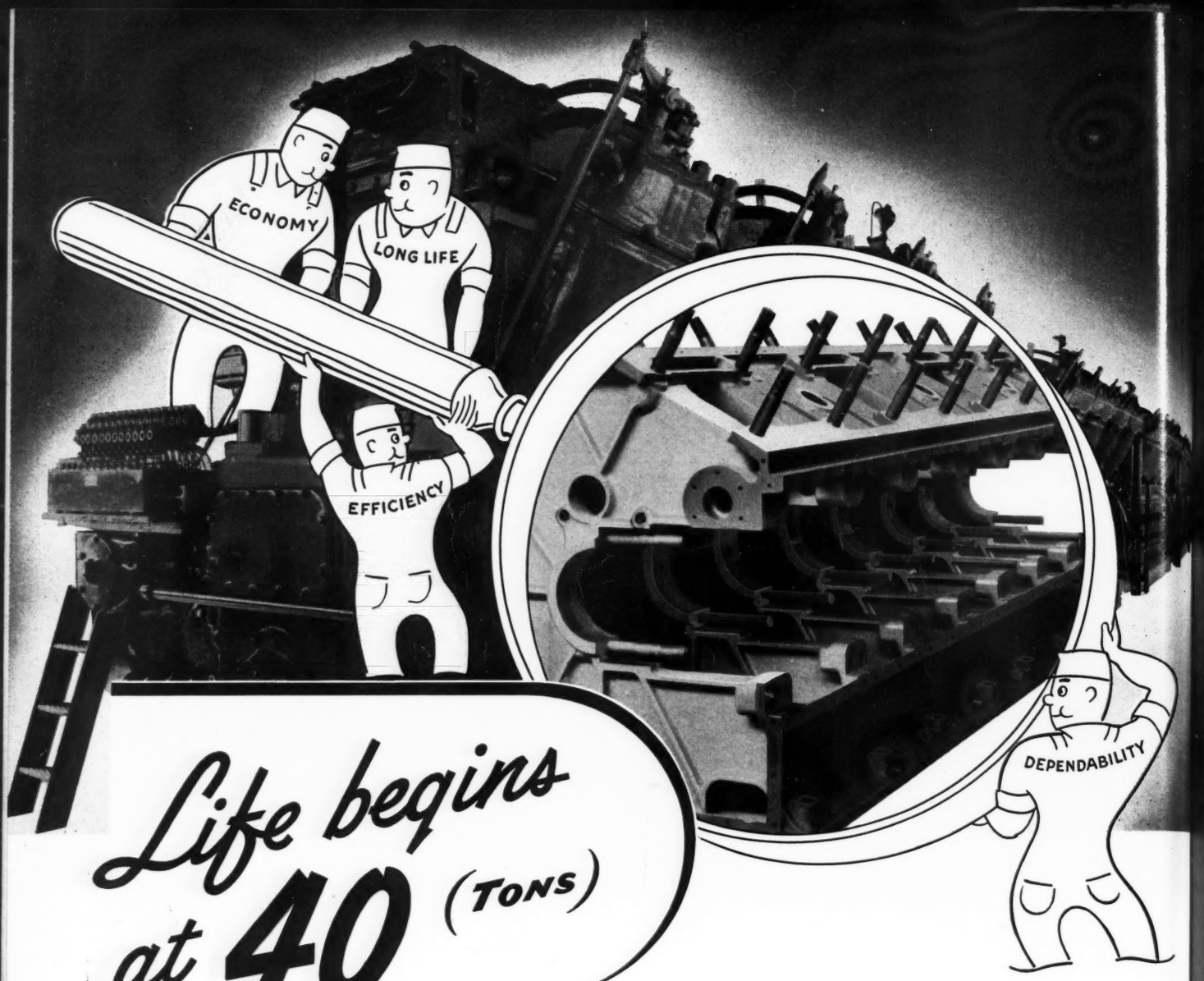

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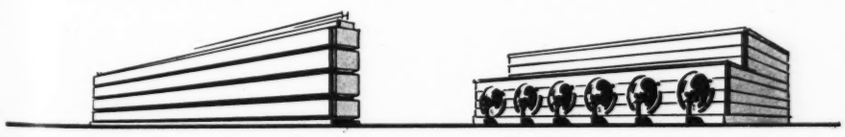

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GAS

REG. U. S. PATENT OFFICE

Eighteenth Year of Publication

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GUEST EDITORIAL

Hold On - - - - Then Advance!

By HARRY K. WRENCH

President, Minneapolis Gas Light Company, Minneapolis, Minnesota

WHAT does an amateur editorial writer discuss when his country is at war? Surely not about the past—the birth and early struggles of the gas industry; not about its recovery after being down for a count of nine on the introduction of the electric light; not of the battle to hold our domestic load during the bottomless '30's, or of our more than doubling our domestic business by a forward pass by way of domestic heating during those same years. No, one does not write about those things. Nor does one write about the future, except to say that with it will come victory, for without victory, we as a country, as individuals, or as an industry, have no future.

However, since I have accepted the task, or doubtful honor, of writing an editorial, I choose to write about the present. The now and how and what we as individuals, and as a part of a great industry, are going to do right now to help this great country of ours win the aforesaid victory.

First, we as individuals are going to do not only what our country asks us to do, but we are going to do it to the best of our ability and to the utmost of our endurance, and, in this connection, I can't help recalling Kipling's "If," which I learned in high school and still especially remember the lines:

> "If you can force your heart and nerve and sinew
> To serve your turn long after they are gone
> And so hold on when there is nothing in you
> Except the will which says to them: 'Hold On!' "

That is what our soldiers do—hold on—and then advance.

Also as individuals, we are going to get our bodies back in shape, get rid of the spare tire at the midriff. We're going to do without those things our government requests us to eliminate in our daily lives, and we're going to make those small sacrifices gladly, knowing that those things we give up will free manpower and material, which will in turn save lives by bringing that victory sooner. If it's butter or guns, cars or tanks, we'll take dry bread on our hike.

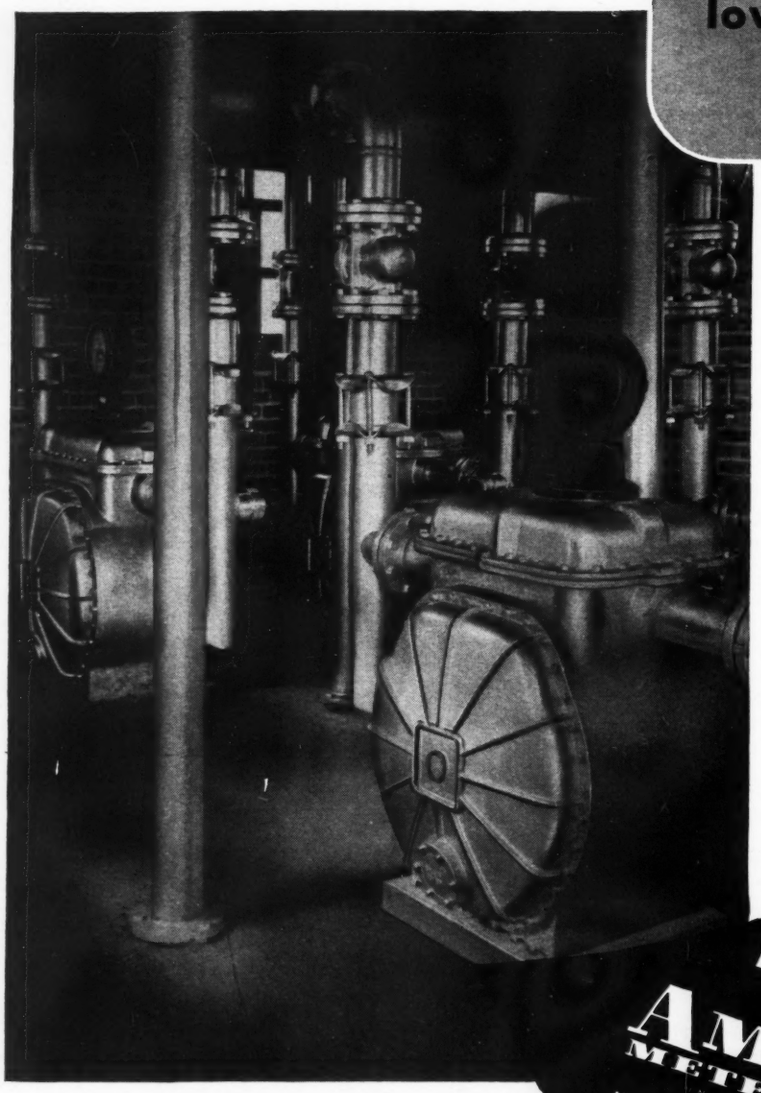
We as individuals are going to work harder and longer hours, we're going to convert a lot of our personal man hours heretofore wasted to useful tasks, such as drilling men for home defense, acting as air wardens, air watchers, fire wardens, extra police, or any other job we are now able to do or can be trained to do. We are going to pay our taxes cheerfully—buy defense bonds until it hurts not ourselves, but our enemies. We are going to do all of this, knowing it is little enough, for many of the younger men in our industry are going to sacrifice that which is only less dear than liberty—their lives.

As an industry, we are going to do collectively just what we are going to do as individuals. We are going to work harder and longer. We will make an honest effort not to use anything in the way of material or man hours that does not directly contribute to winning the war. We are going to protect our properties, so that we may give uninterrupted service to the many industries we supply, which are turning out vital war products. If it becomes necessary to choose between comfort for our customers and process gas for our vital war industries, the industries will come first. Our customers will want it that way.

We as an industry are going to be so occupied doing our own share of winning the war, we are not going to have any time to spend criticizing others and the way in which they do their part in the defense work. In short, we're going back to the pioneer days of American Patriotism.

Once again

IRONCASE meters chosen for accuracy and low performance cost!



● Showing three of the four master meters (Metric-American 500-B Ironcase models—equipped with Metric Volume and Pressure Gages) inside meter house of a prominent low cost housing project.

● **Long-life meter accuracy and stamina, are carefully considered economy factors in this installation at a newly completed FHA low cost housing project in a large Southern city. In peace and wartime economy, the space saving, rustproof METRIC-AMERICAN Ironcase contributes to low cost gas service for thousands of industrial and other large-volume users of gas.**

. . . Outstanding performance made possible by Ironcase features such as one-piece body casting, rigidly fastened full bellows diaphragms, large capacity valves (non-pulsating, minimum friction type), gas-tight stuffing boxes, full provision for bearing lubrication and for condensate drainage.

A-1820

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THERMALLY THINKING

Not Too Bad

IF WE weren't behind the eight ball in one of the toughest international games of dirty pool that was ever played, we would add our voice to the chorus that deplores the issuing of War Production Limitation Order No. L-31. Under normal conditions a government ruling that natural gas could not be delivered to new house heating installations or to conversion jobs and that delivery could not be increased to non-residential consumers except under severe restrictions, would be regarded as fatal to the continued growth of the industry.

But under the circumstances we believe that the order as formally issued should be regarded as neither as drastic as was anticipated nor as detrimental to the ultimate interests of the gas utilities as had been feared. The restrictions placed on the use of gas for new house heating installations in certain areas are no more than those which good business practice within the utilities themselves had already dictated. In effect they coincide with procedure that had already prevailed in many areas where increased demand presaged a shortage in gas transmission facilities.

As damaging to the prestige of natural gas as any order itself, can be the manner of its release to the public. Had the WPB press release accompanying the order been couched in terms of an impending shortage of gas reserves, as was earlier anticipated, the crisis could, and undoubtedly would, have been made capital of by the coal interests. But with the reason for the curtailment laid at the door of the scarcity of materials to construct new transmission and distribution lines, the opportunity to trot out the old bogey of a dwindling natural gas supply was denied them.

It is not within our province to say whether or not every area subject to the prohibitions of L-31 rightfully belonged on the list. We do believe, however, that the temper of the War Production Board's power branch, and the attitude in the Office of the Petroleum Coordinator are such that the utilities in any area that feel themselves unnecessarily restricted will have an opportunity to present briefs and exhibits to support their requests for relaxation or amendment of some of the provisions of the order.

We are convinced from first hand observation that the relations between the gas industry and the various war agencies of the government have shown decided improvement in the last three months. The cooperative spirit of those who have gone to Washington to speak for the industry has made a pronounced impression on the many and various agencies with whom they have had to deal. Government representatives, on the other hand, have shown an increasing willingness to solicit and to entertain the views of qualified gas men on any problem involving the industry.

Willingness to be of service must always be coupled with restraint, however, and we believe that the time has come when the wholesale influx into Washington of self appointed spokesmen must come to an end. The confusion of many counsels has already impeded the nation's initial war effort, and it is only since the appointment of Donald Nelson's War Production Board that the advantages of centralized authority have been realized.

Competent and informed gas men are now associated with the OPC, and it is within their province to collect the best opinions, technical and managerial, and act upon them. The very fact that the gas limitation order was more temperate in tone and less restrictive in its provisions than it might well have been and was expected to be, is an indication that the views of the gas industry are being consulted. And it is our opinion that where those views spring from an unselfish desire to coordinate the requirements of defense with the interests of maintaining gas service they will be accorded an ever increasing respect and consideration.

A Stitch in Time

SOME time ago President Roosevelt warned that no section of the country could be considered free from the threat of enemy action in this war. Recently, a submarine appeared off the California coast and shelled an oil field and a refinery, and the following night Los Angeles had a disputed air raid in which the anti-aircraft fire was real enough, regardless of whether or not enemy planes were present.

These words and events underscore the necessity for every gas company in America to organize itself now for the possible disaster of bombing or sabotage. In this issue apears the report of the Atlanta (Ga.) Gas Light Co.'s preparations to deal with such a possibility. This article presents a detailed study of the measures adopted by that company. It merits study by all gas company officers.

Broad in conception but detailed in planned execution, the precautions taken by the Atlanta Gas Light Co. are likely to yield three important by-products in addition to achieving the major aim of holding service interruptions and life and property damages to a minimum in case of attack from within or without.

First, the morale of Atlanta's citizens will be considerably improved. No better cure for civilian panic could be prescribed than the sure knowledge that the gas company is ready to take whatever measures are necessary to protect the community both against interruptions of service and against unnecessary danger from broken mains.

Second, the public relations between the company and its consumers will be definitely advanced. Good will is earned by just such demonstrations of company contributions to the order and security of the city.

Third, the employee's confidence in the competence of the company management will be greatly increased. Proof that an intelligent and definite plan has been developed is the best guarantee that employees will obey every order explicitly if trouble comes.

GAS at WAR

LAST month this shooting war came to the United States. On the evening of February 23 while the President, over an international hook-up addressed the peoples of the world on the state of the war, an enemy submarine, presumably Japanese, arose from the sea off the Pacific Coast and during a 25-minute attack pumped 16 shells into the ric hoil fields at Elwood, just north of Santa Barbara. Little damage was done—only one oil well derrick being struck, according to eyewitness reports. And no lives were lost. Again, early Wednesday morning, February 24, a squadron of enemy planes were reported over the coastal areas near Los Angeles. The city was plunged into blackness, and for several hours the brilliant flares and reechoing booming of anti-aircraft firing filled the California sky. To those who sprang from their beds to witness this aerial display, to those who took cover to avoid the spray of anti-aircraft fire—this could be but one thing—WAR.

It is significant that the enemy's first attacks were made against the petroleum and gas reserves of the Pacific Coast. Significant also is the fact that the gas utility industry, long alert to this threat of war, has been, is now, and will in the months to come be prepared for any eventuality.

■ ■

More Gas for War Plants

TO PROMOTE increased production of natural gas for the use of war industries in the Appalachian area, a modification of the petroleum and natural gas conservation order was issued February 13 by the Division of Industry Operations on the recommendation of the Office of Petroleum Coordinator.

The provision of Conservation Order M-68 which forbids the construction of new natural gas wells unless they follow a spacing pattern of not more than one well to 640 acres has been revised in the states of New York, Pennsylvania, West Virginia, Ohio, and Kentucky.

The February 13 order, which is Supplementary Order No. M-68-1, is issued because additional quantities of natural gas are needed for war industries, especially in Cleveland, Pittsburgh, Youngstown, and other cities in the area affected.

Under the terms of the amendment, new natural gas wells may be drilled to the Onandaga limestone, Oriskany sandstone, or Devonian shale horizons if they follow a uniform well-spacing pattern of one well to each 160 acres and to other horizons except in a condensate field if they follow a spacing pattern of not more than one well to each 40 surface acres. In either case, the drilling of new wells is subject to additional restrictions as to the distances between wells and drilling units.

Provisions of the conservation order with respect to the consolidation of property units have been changed to correspond to the well-spacing provisions of the amended order.

■ ■

From "Defense" to "War"

THE Petroleum Industry Council for National Defense has become the Petroleum Industry War Council, Petroleum Coordinator Harold L. Ickes announced in February.

The change in the designation of the representative group of 72 industry leaders gives formal recognition to the fact that the prime function of the council is that of aiding the coordinator in securing all-out industry participation in the war effort.

In effect, the group has been serving as a war council from its very inception. Established in November, it held its first meeting on December 8, 1941, the day after the Japanese attack on Pearl Harbor.

The formal change in the designation of the Council was accomplished by amendment of the coordinator's recommendation No. 24, which outlined the duties and functions of the industry group.

■ ■

Priorities

Amendment 3 to Conservation Order M-68: Issued last month by the War Production Board, this amendment provides for clarification and relaxation of the uniform well-spacing provisions. A formal interpretation, No. 2, issued at the same time clarified the meaning of the term, "lease equipment" as used in the order.

Interpretation No. 2 makes clear that the term "lease equipment" means fixed and stationary equipment and materials installed on any property located within the protective boundaries of the field or pool for direct or indirect use in the production of petroleum.

This includes production offices and camp facilities located adjacent to any field. Stationary equipment is interpreted as tanks, oil-treating equipment, water-disposal equipment, and central power units (but not pumping units).

"Lease equipment" does not include the well, well equipment, pumping or artificial lifting equipment, flow and gathering lines, pressure maintenance plants and other plants for the extraction of gasoline and associated hydrocarbons or plants for other treatment or processing of natural gas.

Paragraph (b) of the amendment, which applies to all wells spudded after December 23, emphasizes the following points.

1. The drilling unit on which the well is to be located must consist entirely of acreage not attributable to another well.
2. The property line of an oil drilling unit cannot be closer than 330 ft. to an existing well; a gas drilling unit cannot be closer than 1320 ft. to an existing well.
3. A drilling unit that is not square must contain the required area and cannot be more than twice as long as it is wide.
4. No well can be spudded after December 23, 1941, unless all separate property interests within the 40-acre area comprising the drilling unit are consolidated. (This provision is made to protect small property owners. It is also the intent of the amendment to make clear that no property "islands" may be formed within a drilling unit.)
5. An oil well must be spudded at least 990 ft. and a gas well 3960 ft. from any well spudded in the field after December 23, 1941.
6. An oil well must be spudded at least 660 ft. and a gas well at least 2640 ft. from a well spudded on or before December 23, 1941.
7. An oil well must be spudded at least 330 ft. and a gas well at least 1320 ft. from any lease, property, or subdivision line that separates unconsolidated property interests.

New Priority Forms: The use of the new Forms PD-1A and PD-3A to assign all individual preference ratings ceased to be optional March 2 and are now mandatory. Form PD-3A will be used to assign preference ratings to deliveries under purchase contracts of the army, navy and certain other government agencies specified in Regulation No. 3. Form PD-1A will be used as an application for priority assistance on material other than material purchased by the army, navy, and other specified government agencies, and other than material which can be procured under a preference rating order, "P" series, Form PD-200, used in

applying for a project rating, and Form P-46, used in applying for operating and maintenance materials (GAS, February, page 29), are not affected by the new regulations covering Forms PD-1A and PD-3A.

Limitation Order Amended: The limitation order L-23 which prevented the use in the manufacture of domestic cooking appliances of any "bright work" parts using copper, nickel, chromium or aluminum already in stock was amended February 7 to permit the employment of such parts already fabricated. The prohibition against processing any further parts still stands. The amendment recognizes that the parts already fabricated have little value except to the manufacturer who had designed them specifically for his products.

■ ■

Conservation of Materials

THE War Production Board has asked all associations to urge their members to do their utmost to conserve materials. Waste paper, including corrugated boxes, newspapers, and wastebasket paper is now valuable and should be saved and sold to junk dealers at frequent intervals. The same is true of metal scrap, rubber, and other waste or unused material of many kinds. The American Gas Association has recommended to its company members that a responsible official of each company be appointed to survey warehouses, basements and yards for the purpose of discovering forgotten accumulations and putting them in circulation. It also offers its services as a clearing house for the sale or exchange of unused equipment or machinery too valuable to junk.

In line with this patriotic activity other companies may be interested in a similar job being done by the sales department of the San Francisco division of the Pacific Gas & Electric Co. The commercial and industrial salesmen, in the course of their work, visit many plants and are now securing listings of unused equipment which can be offered for sale, rent or loan. Listings include boilers, furnaces, motors, heaters, etc. Out of 40 pieces of equipment listed in the first two weeks of the activity, four were sold.

■ ■

Refrigerators Frozen

AMERICA'S domestic mechanical refrigerator industry is being sent to war.

At a meeting February 15 of the industry advisory committee, the War Production Board announced:

1. All stocks of new refrigerators except those in the hands of retailers or actually in transit to retailers were ordered frozen as of 10 a.m., EWT., Saturday. Retailers may sell one-twelfth the number of new refrigerators they sold in 1941 or 100 new refrigerators, which ever is greater, after which the freeze will automatically apply to stocks held by them. Manufacturers or distributors may sell, lease, trade, lend, deliver, ship, or transfer new refrigerators only under specific authorization by WPB.

2. An order will be issued shortly requiring cessation of all refrigerator production after April 30. Refrigerators now frozen and those to be produced between now and the closing date will form a pool of approximately 750,000 refrigerators to meet military and highly essential civilian needs.

Biggest factor in WPB's program to expedite conversion of the industry to 100% war work is that contracts already held plus contracts expected by the industry will result in the use of approximately 70% of plants and manpower for output of war goods.

Under the terms of the forthcoming stop-production order, manufacturers will be permited between February 15 and April 30 to make three times as many refrigerators as are allowed under the existing production quota. The industry's quota for this month is 163,000 units. In the next 2½ months, it will be permitted to produce 489,000 units.

It is intended that the refrigerators to be produced should be made from materials now in inventories, but Jesse L. Maury, government presiding officer and chief of the electrical appliances and consumers' durable goods branch, said that relief might be granted in cases where only a small amount of scarce materials was required to balance inventories.

Mr. Maury said that no restrictions would be placed on the manufacture of spare parts to keep refrigerators now in use in good running order.

Federal Bureau of Investigation
United States Department of Justice
Washington, D. C.

February 23, 1942.

Mr. Arthur Rohman
Managing Editor
GAS
1709 West Eighth Street
Los Angeles, California.

Dear Mr. Rohman:

I have your letter of February 10, 1942, together with the February, 1942, issue of your publication "GAS", and I read with interest your article on plant protection. It was a pleasure to cooperate with you in this matter and I appreciate your thoughtfulness in making a copy of this issue available to me.

With best wishes and kind regards,

Sincerely,
J. E. HOOVER.

Refrigerator Prices Set

IN A new price schedule issued February 9 by OPA Administrator Leon Henderson, existing prices for mechanical household refrigerators, including the line manufactured by Servel, Inc., Evansville, Ind., were set as the maximum that manufacturers might charge. Exceptions: General Electric Co. and Frigidaire Division of General Motors Corp., who had agreed with OPA to continue to sell at 1941 prices until required data for 1942 model prices were submitted for approval.

The schedule uses "net price quoted" to describe the ceiling levels and defines that term as "the actual price, exclusive of Federal excise tax, but including charges for warranty (guarantee of performance) and cooperative advertising, to be received by the manufacturer, f.o.b. seller's point of shipment, or delivered to the purchaser, whichever the price list specifies."

■ ■

Fire Protection Booklets

Employee Organization for Fire Safety. National Fire Protection Association, 60 Batterymarch St., Boston, Mass., 1942. 48 pp. 25¢: The booklet in clear, concise language supplemented by illustrations, devotes a separate section to the duties and responsibilities of each group in a business or industrial organization, the employees, the department head and the plant manager. None of the recommendations and suggestions made for personal and plant protection are either new or untried. Each has proved its worth on countless occasions in the past; each, if carefully observed and put into regular practice, will be invaluable in any future emergency. What every employee must know about fire alarms, air raid evacuation procedure, fire appliances, incendiary bombs, and safety housekeeping is presented in detail, graphically illustrated to insure a complete understanding of this essential information.

In order that employee training, evacuation plans, and actual exit drills may be successfully developed and practiced, every department head within a business organization or industrial plant must be prepared to assign emergency duties and stations to those in his charge. Awareness of the principles of exit safety, the carrying-out of exit drills (air raid evacuations), and the placement of fire watchers within his department in order that small fires may be promptly dealt with—all these are important safety factors with which this N.F.P.A. booklet will make him thoroughly familiar in a very short time.

Published Material on Wartime Fire Protection: The National Fire Protection Association offers the following literature at low cost. Much of this material is intended for quantity distribution and is designed to give every reader an intelligent understanding of the nation's great fire defense problem.

Books and Booklets

Arson in Times of War. A grave danger intelligently analyzed and described, with recommendations for defense against it. (15¢.)

Artillery Ammunition Manufacture. An authoritative discussion of one of the most important of present-day industries. (20¢.)

Care and Maintenance of Sprinkler Systems. Useful, money-saving suggestions to property owners and managers.. (5¢.)

Common Hazardous Chemicals. A table of information combining detailed coverage with easy reference. (20¢.)

Construction and Protection of Piers and Wharves. A significant contribution to modern marine transportation. (25¢.)

Dust Explosion Hazards to Powdered Metals. The A B C's of one of American industry's most serious hazards. (15¢.)

Employee Organization for Fire Safety. (See above.) Plant executives wishing to protect their workers and property from fire or air raid will find the answer to these problems in this publication. (25¢.)

Fire Defense. A practical and scentific compilation of the facts about fire defense for all America. Highly interesting, authoritative, comprehensive — the best book of its kind now available. 232 pages, 154 illustrations. ($1.50 postpaid.)

Fire Defense Programs. An outline of suggestions for state and local Defense Councils and Committees. (10¢.)

Flammable Liquids, Gases, and Volatile Solids. A table of data on their fire hazard properties. (25¢.)

Flameproofing of Textiles. Recommended requirements and a description of laboratory tests employed. (15¢.)

Handbook of Fire Protection (Crosby-Fiske-Forster). The new Ninth Edition of the most complete, compact, and valuable of fire protection manuals. 1308 pages, 699 illustrations. ($4.50 postpaid.)

Hose and Ladder Work. A comprehensive course of fundamental evolutions for training auxiliary firemen. (50¢.)

Magnesium and Its Alloys. An all-important defense metal, its sources, uses, and dangers fully discussed. (15¢.)

National Defense Fires. A splendid pictorial record of recent important fires, 1940-41. (10¢.)

Rural Fire Departments. The organization, operation, and equipment of volunteer fire departments, bulwark of rural fire protection. (20¢.)

Suggested Explosives Ordinance for Cities. For the safe transportation, storage, sale and use of explosives in time of war and peace. (10¢.)

Trailer Pumpers. A report on auxiliary pumping units, a potential emergency need in every American city. (10¢.)

Educational Material for General Distribution

Defend Your Home and Country Against Fire! An attractive colored, informative folder describing incendiary-bomb control; designed for general home distribution. Sample copies gratis. ($1.50 a hundred, $8.50 a thousand.)

Keep Your Home from Burning! A two-color folder on the prevention of home fires, also designed for widespread home distribution. Sample copies gratis. ($1.50 a hundred, $8.50 a thousand.)

Close the Gate on Fire! A dramatic, two-color poster, 12 x 16 in. Sample on request. ($1.50 a hundred, $10 a thousand.)

Victory Over Fire Is Important, Too! A striking poster, 10 x 14 in., vivid and thought-provoking. Sample on request. ($1.50 a hundred, $10 a thousand.)

The total cost of the above items is $8.50 with reduced prices on all quantity orders. Membership (at $10 per year total expense) in the National Fire Protection Association brings valuable literature, technical and popular, issued by the association, as well as numerous other privileges. National Fire Protection Association, 60 Batterymarch St., Boston, Mass.

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Reports From Companies

Pittsburgh, Pa.: Five-column, 14-in. high, national-defense advertisements, sponsored by natural gas companies serving the greater Pittsburgh area, told domestic users the gas they saved on very cold days could build "Tanks, Guns, Planes!" (See cut.)

Natural gas companies are expanding all facilities to keep pace with industry's needs and your needs, the publicity read. Defense production takes heat, housewives were told, so on very cold days save the gas that makes heat:

(1) Cook and roast foods at lower temperatures (this saves vitamins, reduces meat shrinkage).

(2) Don't overheat rooms, so that you must open doors to cool off.

(3) Repair leaky hot-water faucets (saves water and gas).

(4) Install storm doors and insulate.

The Gas you save on very cold days
can build
TANKS, GUNS, PLANES!
Behind our armed forces . . . the steady flame of Natural Gas
Natural Gas is vital to war industries . . .
Use it wisely!
Natural Gas Companies

Save heat and save gas, the publicity emphasized. Use gas wisely! For March and April publicity the "cold" weather angle on very cold days may be shifted to a "cool" weather angle.

Jackson, Mich.: Consumers Power Co., through its vice president and general manager, D. E. Karn, has issued a letter headed "Material Shortage" to all employees. The letter explains the restrictions placed upon the gas utility industry by the war effort, seeks the cooperation of every employee. Closing paragraph: "This job cannot be done by the purchasing department, or the engineers, or the general office, or the division office. Each and every employee must be on the alert and do his part if the company is to maintain its position and do its share in supplying to the industries of Michigan, which rank near the top in volume of defense contracts to date."

Vancouver, B. C.: Officials of the B. C. Electric Railway Co. have set at rest fear of residents in the vicinity of their gas-holders of possibilities of an explosion in the event of an air-raid. John Keillor, gas engineer of the company, states that on the outbreak of war the company established an armed guard day and night at its gas-holders to prevent possibility of sabotage and also erected a barbed wire topped fence around the country.

As far as actual air-raids are concerned, Mr. Keillor points out that the type of water-sealed gas-holders used by the company are not considered dangerous to surrounding property even if it is hit by bombs. He states in England and elsewhere where gas-holders of this type have been hit, the gas has been found to pass out harmlessly through the hole made, or if it should ignite it has been quickly brought under control and there is little or no danger of explosion.

Laguna Beach, Calif.: A high pressure natural gas line which runs south from Los Angeles through Laguna Beach towards San Diego solved the problem of an air raid siren for City Engineer J. R. Lester Boyle. Engineer Boyle hooked the big whistle onto the high pressure line, and the whistle now has power enough to blast all Laguna Beachers from their beds.

Wyoming, N. Y.: Gas lights were extinguished for the first time in 34 years when this town had its first blackout test in February. The lights had burned day and night since their installation in 1908.

Portland, Ore.: In cooperation with the Oregon State Defense Council and

the Multnomah County Defense Council, Portland (Ore.) Gas & Coke Co. is distributing to all customers, in the form of a bill sticker, revised instructions for handling gas appliances during air raids and blackouts. (See cut.)

R. G. Barnett, vice president and general manager of the company, states that these rules follow closely the instructions adopted by the American Gas Association and the National Office of Civilian Defense in Washington, D. C., for the gas industry and that these revised instructions cancel the first regulations released which incorrectly advised gas appliance users to turn off pilot lights and shut off gas valves under any air raid or blackout condition.

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Driving During Blackouts

San Diego, Calif.: The San Diego Gas & Electric Co. has secured permission to operate emergency equipment during blackouts. At first the company developed an approved blackout light of its own but it has found the K-D Lamp Co. of Cincinnati to be successful. This lamp has been approved by OCD and is handled on the coast by the Western Auto Supply Co. Rules issued to drivers of blackout cars are as follows:

A limited number of company-owned vehicles has been equipped with approved blackout lights under authority of the San Diego Chief of Police and the San Diego County Sheriff. Each vehicle so equipped is now considered a Defense Emergency Vehicle restricted to the use of employees of this company in performing company emergency work only during blackouts or air raids. Each vehicle carries an identification sticker in the lower right corner of the windshield on which is printed a large black letter "E".

Regardless of the issuing authority, all permits will be recognized by police departments or other officers throughout San Diego county. The single rear light is red, mounted in all cases on the left side at rear. These lights are visible for a distance of 600 ft. straight ahead. Employees driving these vehicles must observe the following rules:

1. Do not operate an emergency vehicle during blackout except to complete an important mission, or unless it is necessary for you to reach headquarters, or the nearest telephone where you will remain, unless otherwise directed, until the All Clear signal.

2. If a blackout signal is given while you are driving on an important mission, pull to the nearest curb and stop. Extinguish the regular lights of the vehicle. Close the special switch which turns on the blackout lights and turns off the stop light. *Rest a few minutes* until your eyes become accustomed to the darkness.

3. When you are able to distinguish objects in the roadway, *and you must move*, then proceed at not more than 10 miles per hour in cities—not more than 15 miles per hour outside cities.

AIR RAIDS and BLACKOUTS
Instructions for Handling Gas Appliances

Here are the latest revised instructions of the Office of Civilian Defense for handling gas appliances in air raids or blackouts.

"1. Turn off stove burners that are lighted, or any others that you are accustomed to turn on and off by hand, but NOT the pilot lights.
2. Do NOT turn off the main gas valve at the meter just because there is a blackout.
3. Only if bombs seem to be dropping in your immediate neighborhood, turn off the main gas valve at the meter; or
4. If your home is actually damaged, turn off the main gas valve at the meter.
5. Once the main gas valve at the meter has been turned off, for any reason whatsoever, do NOT turn it on again yourself. Call your local gas company to send a trained man.
These orders must be adhered to rigidly."

January 28, 1942

Oregon State Defense Council
Multnomah County Defense Council

Sticker issued by Portland Gas & Coke Co. to inform its consumers on emergency shut-off procedures.

4. Blackout lights do not illuminate the roadway; they are only to be seen at short distances to prevent collisions.

5. Do not, under any circumstances, blink the regular lights while traveling during a blackout.

6. If, for any reason, you are forced to leave the vehicle, extinguish blackout lights, close the windows and lock the doors.

7. When traveling be alert for other emergency vehicles which may be moving.

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Offices of Civilian Defense

Several manuals dealing with Civilian Defense activities in addition to that concerning Volunteer Offices have recently been issued by the OCD and are now in the hands of Governors or State Defense Councils by whom they will be distributed to local communities. The titles:

1. "Protection of Industrial Plants and Public Buildings," a planning guide designed to provide for protection against air raids, the guarding of personnel in an emergency, and the maintenance of a high production rate. This pamphlet states that a Utility Control Squad (four or five men) should have available on their truck at all times the following equipment: (1) one helmet each; (2) one all-purpose gas mask each; (3) or four electric lanterns with spare bulb and battery for each; (4) one truck with driver; (5) one bound map of utility service showing layout of distributing systems, location of valves, switches, etc.; (6) proper tools, supplies, and other equipment for efficient execution of assigned duties.

2. "Emergency Medical Service for Civilian Defense," a pamphlet outlining in considerable detail a basic plan for the organization and expansion of hospital facilities along both seaboards and industrial areas in the interior. It also outlines plans for the rapid expansion of nursing facilities through intensive training of adequate numbers of Volunteer Nurses' Aides and other nursing auxiliaries.

3. "Enrolled Volunteer Worker Groups for Civilian Protection," a manual outlining in detail the specifications and restrictions for the reproduction and use of the insignia for the many groups of enrolled volunteer Civilian Defense workers and describing their duties. The pamphlet describes briefly the services for which special training is necessary—such as air-raid wardens, auxiliary police, bomb squads, fire watchers, etc.

4. "Civilian Air Raid Warning System," a pamphlet furnished primarily as a guide to aid local civilian defense organizations in the proper and efficient discharge of their duties with the air raid warning service in the event of air raids, and its purpose is twofold: (a) to furnish a set of instructions to local civilian defense organizations for the installation and operation of a civilian air raid warning system; (b) to explain how the civilian air raid warning system will be coordinated with the military aircraft warning service.

5. "A Handbook of Air Raid Wardens," describes in detail the equipment, activities and responsibilities for this type of emergency worker.

Two other bulletins have been prepared by the War Department, with the assistance and advice of other federal agencies. These are issued by the Division of State and Local Cooperation, Office for Emergency Management.

1. Protective Construction (Structures Series Bulletin No. 1) This bulletin is published to present the general background necessary for intelligent consideration of the subject of protective construction. In no sense should issuance of this bulletin be construed as the signal to start work immediately on any of the protective structures described. Nevertheless, it is deemed essential that responsible civil officials and civilian engineers give thought to methods, plans, and especially procedures that can be followed in their respective localities should such protective structures become necessary in the future. The material presented here has been prepared after close study of the latest information available from European sources, chiefly British, and it is intended as a general summary of this information.

2. Suggestions for State and Local Fire Defense (Fire Series Bulletin No. 1). This report is issued now for two reasons. First, in order to assist in protection of the Nation-wide defense effort from interruption by fire, existing facilities for fire prevention and protection must be analyzed so that they can be supplemented promptly in whatever ways are necessary. Second, to prepare the Nation for total defense, those aspects of civilian defense requiring special organization and personnel, of which fire defense is one, must be launched in advance of other parts of a comprehensive program for which such special provision is unnecessary.

BLUE PRINT FOR DEFENSE

Atlanta Gas Light Co. Prepares for Disaster

IN TIMES of peace, prepare for war, is one American slogan more often honored in the breach than in the observance. But the equally sound advice, "In times of war, prepare for disaster," has been given much more than lip service by the Atlanta (Ga.) Gas Light Co., of which H. Carl Wolf is president.

The Atlanta Gas Light Co. serves a total of 70,000 meters and has 628 employees. Six months ago, under the direction of O. C. Waters, assistant to the president, work was begun on organizing the company to deal with any possible interruptions of its service. Since then, both the employees and materials of the company have been mobilized to combat bombing, sabotage or any other threat to the company's distribution system.

Today, every employee, including clerks, bookkeepers, salesmen, and even the elevator boy, know exactly what is expected of them if an enemy should strike at Atlanta and damage the gas lines. They know where to go, what to do when they get there, and who will be in charge.

The company has organized its plan of emergency operation to coincide with the general state program directed by Walter R. McDonald, State Utilities Defense chairman. Local defense chairman of the Atlanta Gas Light Co. is E. J. Stern, vice president.

The state defense plan provides that if the emergency in any one utility company exceeds the ability of that organization to deal with it, the affected company may call on any other utility in the district for whatever additional men and machines are needed. If the district cannot handle the emergency, the headquarters at Atlanta are called for outside help of whatever nature is required. Gas companies, electric companies, water companies, and telephone companies are all included in this pool of facilities.

Arrangements have also been made with the telephone companies to place utilities' calls second only to those of the army in case of a disaster.

The published instructions for putting the Atlanta Gas Light Co.'s emergency plan into operation begins with a listing of the names, addresses and telephone numbers of those company officers who are to be notified in case of an interruption or a threatened interruption to the gas service in Atlanta. Upon such notice, direction of the plan immediately comes under the jurisdiction of a group of four men, called General Control. This group judges the extent of the damages, selects one of five available plans already prepared, and transmits the orders to place in effect whichever plan is selected.

These orders are transmitted to an executive group called the Plan Control which is in active charge of the actual conduct of the emergency operations. The Plan Control is staffed by heads of industrial and consumer operations, distribution and domestic consumer operations, communications operations, records operations, materials and supplies operations, telephone operations, and safety and claims operations.

Five separate plans are available for dealing with emergencies. Four deal with the turning off of various services according to the seriousness of the emergency, and the fifth arranges for the turning on of services after the emergency is passed. These five plans, according to the material published by the company, are:

Plan No. 1 covering the cutting off of dump and oil standby customers, and calling in crews to execute Plans No. 2 and 3.

Plan No. 2 covering the cutting off of large industrial customers.

Plan No. 3 covering the cutting off of industrial and commercial customers not listed in Plan Nos. 1 and 2, the reducing of distribution pressures, and the turning on of holders.

Plan No. 4 covering the cutting off of part, or all sections, of the distribution system, shutting off apartment house meters, and making radio announcements.

Plan No. 5 covering the making of further radio announcements covering turning on of gas service, the turning on of the distribution system, the checking of all domestic meters, and the turning on of industrial and commercial meters.

Of the 628 employees of the company, 300 have been trained to turn on services and light automatic appliances if the necessity should arise for a complete turn-off of the entire system. It is estimated that all of the 70,000 meters in the company's systems can be turned on again by this group within

Emergency trailer of the Atlanta Gas Light Co. developed and tooled for special work on the company's distribution system in case of attack by enemy forces. M. F. Frazier, emergency foreman (left) and O. C. Walters, director of mobilization (right).

30 hours. Each of these employees was taken through the laboratory and taught how to light every type of automatic appliance.

The paper work in the preparation of the mobilization for disaster called for factual and detailed thinking. The purchase of special equipment to be used only in case of an emergency called for the expenditure of thousands of dollars. The equipment included a stock of special repair parts, special work clothes, such as asbestos suits, gloves, and welding goggles, and special tools, such a spark-proof sledge hammers, pick axes, and pipe cutters. All of this material is tagged, "Not to Be Used Except in Emergency," and stands ready in storerooms separate from those containing ordinary supplies.

Although each of the five plans were developed to meet specific situations, the general form of the instructions for each is similar. For that reason, the paper forms of Plan 1 are completely illustrated in Figs. 1 to 7, and the description of the balance of the plans will be limited to their objectives, their personnel, and their instructions.

If an emergency arises, the General Control, consisting of four persons at present, E. J. Stern, O. C. Waters, E. C. Kollock, and W. H. Ligon, and such other persons as may be assigned, immediately takes complete charge of all operations and issues all general orders for the duration of the emergency. As explained, its function is to determine which of the plans will be executed, and whether or not they will be fully executed. As also explained, the actual execution of the plans is in charge of the group classified as the Plan Control. This is broken down into several divisions with specially assigned functions.

The industrial and commercial consumer division: carries out those plans which have to do with turning off and turning on all industrial and commercial consumers. This control acts on order of the General Control, and supervises crews assigned to this classification.

The distribution system and domestic consumer division: carries out those plans which have to do with reducing pressure, turning off the distribution system, and turning off and turning on domestic consumers. It acts on order of the General Control, and supervises crews assigned to this classification.

The communications division: arranges for radio broadcasts, checks and records all broadcasts made during the emergency. It acts only on order of the General Control.

The records division: acts on order of the General Control. It issues route books, pencils, stationery, instructions and other materials from the emergency cut-off file. It also makes all records, special orders and instructions.

The materials and supplies division: issues all tools and other supplies from stores on order of the General Control. It has such tools and supplies available at the storeroom, and maintains necessary records of all such issues.

The telephone division: arranges for telephone operators and for persons other than those under other plan controls to man sufficient phones to handle calls from the public.

The safety and claims division: supervises all operations as to safety. All accidents and real or suspected claims are reported to it for handling.

The plans involved are designed to be used in an emergency. Speed is, therefore, of vital importance and is sacrificed only in the interest of safety. Plans as outlined and instructions contained are not to be deviated from except on specific order of the General Control.

It is the function of the Plan Control to supervise the personnel and operations placed under the various divisions. The responsibility for proper execution of these operations is on these divisions, and their authority is limited only by the General Control.

Plan 1 is illustrated. The following outline gives the essentials of Plans 2, 3, 4 and 5.

Plan No. 2

Object: Cut off large industrials.

Personnel: One crew of 15 members, divided in two sections.

General Instructions:

Upon order of general control group, Plan No. 2 will be executed. Crew members No. 2 through 7 will phone representatives of customers listed (or such customers as instructed to call) requesting immediate gas cut off. Proper entries will be made on cut off orders, showing person contacted and response received.

Crew members No. 8 through 15 will proceed at once to check cut off of all customers involved, making a complete report as called for on Emergency cut off order. As soon as completed crew members will report to crew captains and stand by for further orders.

Instructions to Crew Captain:

1. Assign crew members 2 through 7 to call customers, requesting them to turn off gas at once.
2. Assign crew members 8 through 15 to check all customers and report when they have cut gas off, also all customer comments.
3. Require all crew members to return to headquarters as soon as assignment is completed.
4. Make report on report form "B".
5. File completed orders in Emergency cut off file, section "E-B".

Instructions to Crew Members, 2 through 7:

1. Call all customers on cut off orders assigned to you, requesting them to cut gas off at once.
2. Report completion of assignment and comments of customer to crew captains.
3. Stand by for further orders.

Instructions to Crew Members, 8 through 15:

1. Check all customers listed on cut off orders assigned to you to see that they have cut off gas.
2. Report all refusals to crew captains and follow instructions given.
3. Report completion of assignment and comments of customers to crew captain.
4. Return to headquarters on completion of assignment and stand by for orders.

Plan No. 3

Object: Turn on holders, reduce pressures in distribution system, cut off industrial and commercial customers listed.

Personnel: Two crews, the first of 15 men divided into three sections, the second of 48 men.

General Instructions:

Upon order of General Control Plan No. 3 will be executed.

3a. Holders will be turned on in accordance with instructions given on order covering. As soon as completed, a report will be made to the crew captain. Holders will be read each thirty minutes, and the reading reported to the crew captain who will compute and record the output.

3b. Crew members will execute pressure reduction orders in accordance with directions on orders as issued to them. Any difficulty will be reported to the crew captain immediately, and reports will be made of completed orders at once after assignment is finished. A report will be made of each reduction on the Emergency pressure reduction order as called for. When completed, crew members will stand by for further orders.

3c. Crew members No. 1 through 15 will phone representatives of all customers listed, requesting immediate gas cut off. Proper entries will be made on Emergency cut off orders, showing persons contacted and response made. Crew members No. 16 through 47 will proceed at once to check cut off of all customers involved, making a complete report as called for on Emergency cut off order. As soon as completed, crew members will report to crew captain and stand by for further orders.

Instructions to Crew Captain of C1:

1. Assign crew to reduce pressures and put holders on line, in accordance with pressure reduction orders.
2. Require crew members to report any difficulties at once.
3. Require crew members to report completion of assignments.
4. Require crew members to return to headquarters at once on completion of assignment.
5. Make report of assignments on report form "C-1".
6. File completed orders in Emergency cut off file, section "E-C1".

Permanent Orders Plan No. 1

APPENDIX "A"

PLAN NO. 1

Control: D. D. Beach, J. E. Clark, A. H. Wimberly, W. S. Dee.
Object:
(a) Cut off all dump and oil standby customers.
(b) Call in crews to execute Plan Nos. 2 and 3.
For customers to be cut off under (a), see Emergency cut-off file, section "A."

Personnel: Crew Captain J. E. Clark.
For crew members see crews, Emergency cut-off file, section "A," also Crew Roster, crew "A."

Transportation:
See transportation list, Emergency cut-off file, section "A," also transportation assignment group "A."

Instructions:
(a) Upon orders of General Control, Plan No. 1 will be executed. Crew members No. 2 through 5 will phone representatives of all dump and oil standby customers, requesting immediate gas cut off. Proper entries will be made on cut-off orders, showing person contacted and the response made.
Crew members No. 6 through 10 will proceed at once to check cut off of all customers involved, making a complete report as called for on Emergency cut-off order. As soon as completed, crew members will report to the crew captain and stand by for further orders.

(b) The following crews will be called in with all equipment and asked to stand by:

Crews "B."

Crews "C" 1.

Crews "C" 2.

Crews are listed in Emergency cut-off file bearing corresponding index letters, and in the Crew Roster.
Crew members should be instructed as to the proper transportation equipment they should bring.

FIG. 1. Each plan has a set of general instructions similar to this in which operations are broadly outlined for the information of all the personnel involved in emergency activities.

INSTRUCTIONS TO CREW CAPTAIN

PLAN NO. 1

Plan Control: Industrial and Commercial Division.
Crew "A."
Crew Headquarters: Industrial Dept., 2nd floor, Main Building.
Phones to be used: To call customers—238, 246, 256, 284.
To call crew captain—245.
Order Designation: "Consumer Class A"—in Emergency cut-off file, section "A."
Transportation: Transportation list—Emergency cut-off file, section "A.'"

General Instructons:

1. Assign crew members 2 through 5 to call customers, requesting them to turn off all gas at once.
2. Assign crew members 6 through 10 to check all customers and report when they have cut off, also report all customer comments.
3. Require all crew members to return to headquarters as soon as assignments are complete.
4. Make report on report forms "A."
5. File completed orders in Emergency cut-ok file, section "E-a."

FIG. 2. Each plan has separate instructions for the crew captain informing him of his specific duties according to the requirements of whatever plan is ordered into effect. However, the general form of the order remains the same in each case.

INSTRUCTIONS TO CREW MEMBERS

PLAN NO. 1

Crew "A"—Members 2 through 5.
Crew Captain—J. E. Clark.
Crew Headquarters: Industrial Sales Dept., 2nd floor, Main Bldg.
Phones to be used: To call customers—238, 246, 256, 284.
General Instructions:

1. Call all customers listed on cut-off orders assigned to you, requesting them to cut off gas at once.
2. Report completion of assignment and comments of customer to crew captain.
3. Stand by for further orders.

FIG. 3. Instructions to the members of the various crews specifically cover the particular work to which they have been assigned.

INSTRUCTIONS TO CREW MEMBERS

PLAN NO. 1

Crew "A"—Members 6 through 10.
Crew Captain—J. E. Clark.
Crew Headquarters: Industrial Sales Dept., 2nd floor, Main Bldg.
Phones to be used: To call crew captain—Ext. 245.
General Instructions:

1. Check all customers listed on cut-off orders assigned to you to see they have cut off gas.
2. Report all refusals to crew captain and follow instructions given.
3. Report completion of assignment and comments of customer to crew captain.
4. Return to headquarters on completion of assignment and stand by for further orders.

FIG. 4. The number and the assignments of crew members depend upon the plan in effect. As the size of the crews change, members are frequently called upon to perform different duties.

TRANSPORTATION ASSIGNMENT

SECTION A

Equipment Assigned:
Five Half-ton Trucks

Co. No.	Driver
1.....	.....
2.....	.....
3.....	.....
4.....	.....
5.....	.....

Note: Co. number and driver to be entered by team captain.
Report cars used to general control.

FIG. 5. Trucks and cars in the regular service of the company are used for much of the emergency work. However, specially equipped trucks and trailers are used for some work.

PLAN 1
CREW "A"

Name	*Address*	*Phone No.*
1. J. E. Clark, Capt.	846 St. Charles Ave., N.E.	Ve. 4027
2. J. P. Rifflo	2995 Lookout Place, N.E.	Ch. 7350
3. R. S. Chapman	1435 Richland Road, S.W.	Ra. 7282
4. R. M. Berry	550 Cresthill Ave., N.E.	Ve. 2444
5. L. J. Gaissert	253 14th St.,N.E., Apt. 13	He. 7331-J
6. J. O. Fuller	696 Plum St., N.W.	At. 2062
7. E. E. Gilleland	1781 Howell Mill Rd., N.W.	He. 3458-W
8. W. N. Morris	1800 Delaware Ave., N.E.	De. 9949
9. R. W. Hyer	456 Candler St., N. E.	De. 3991
10. W. H. McMullan	1125 Hardee St., N.E.	Ma. 9497

FIG. 6. So thorough has been the preliminary work of organizing the action to be taken in an emergency that even the personnel of each crew is listed in the file with their addresses and telephone numbers.

Instructions to Crew Members of C1:

1. Reduce pressures in accordance with pressure reduction orders.
2. Report any difficulties to crew captain at once.
3. Report completion of assignment to crew captain and return to headquarters for further orders.
4. Special—*To member turning on holders.*
   a. Be sure you have keys to holder gate and L. P. governor room.
   b. Read holders and report to crew captain every 30 minutes.

Instructions to Crew Captain of C2:

1. Assign crew members No. 2 through 15 to call customers requesting them to cut off gas at once.
2. Assign crew members No. 16 through 48 to check all customers and report when they have cut gas off, also all customer comments.
3. Require all crew members to return to headquarters as soon as assignments are completed.
4. Make report on report form "C-2".
5. File completed orders in Emergency cut off File, section "E-C2".

Instructions to Crew Members of Crew C2, 2 through 15:

1. Call all customers listed on cut off orders assigned to you, requesting them to cut off gas at once.
2. Report completion of assignment and comments of customer to crew captain.
3. Stand by for further orders.

Instructions to Crew Members of C2, 16 through 48:

1. Check all customers listed on orders assigned to you to see they have cut off.
2. Report all refusals to crew captain and follow orders given.
3. Report completion of assignment and customer comments to crew captain.
4. Return to headquarters on completion of assignment and stand by for orders.

Plan No. 4

Object: Cut off distribution system, turn off apartment meters, make radio announcements, prepare meter route sheets for Plan No. 5.

Personnel: Records division and two crews, the first consisting of 18 men divided into sections of 6 each. The second consisting of 40 men divided into two sections of 20 each.

General Instructions:

Upon orders of General Control group Plan No. 4 will be executed.

(a) Crew members will proceed at once to execute orders to cut off sections in accordance with orders from General Control. Any difficulties will be reported to crew captains at once, and reports will be made as soon as orders are executed. As soon as assignments are completed, crew members will stand by for further orders.

(b) As soon as orders are received from General Control to cut off sections, crews will proceed to cut off all apartment meters listed in those sections. When completed, crew members will report to crew captains and stand by.

(c) Plan Control will contact broadcasting stations and release announcement listed under "D-3". A report will be made of broadcasts arranged and actual broadcasting will be checked and recorded on form "D-3"-"E1".

(d) Upon request of Plan Control, Records Division will insert special meter route sheets for prepay meters in regular meter route books in accordance with route and folio numbers and Emergency cut-off Districts.

Instructions to Records Division:

1. Upon instructions of Plan Control, obtain special prepay meter route sheets in Emergency Cut Off file, section D-4 and insert them in meter route books according to route and folio numbers and emergency cut off districts.

Instructions to Crew Captain of D1:

1. Assign crew members to close valves to cut off districts ordered off by Plan Control.
2. Require crew members to report immediately any difficulty encountered in the execution of orders.
3. Require crew members to report completion of assignments.
4. Require crew members to return to headquarters at once upon completion of assignment.
5. Make report of assignments on report form "D-1".
6. File completed orders in Emergency cut off file, section "E-d1".

Instruction to Crew Members of D1:

1. Close valves to cut off districts strictly in accordance with instructions given on your orders.
2. Report any difficulty encountered to crew captain at once.
3. Report completion of assignment to crew captain.
4. Upon completion of assignment return to crew headquarters and stand by.

Instructions to Crew Captain of D2:

1. Issue one roll of tape and ½ bar of soap to each crew member. Be sure that all crew members have 10 in. pipe wrench.
2. Assign crew members to cut off apartment meters.
3. Instruct crew members to contact apartment managers and deliver letter of explanation.
4. Instruct crew members to cut off all meters without exception.
5. Instruct crew members to record on back of cut off order the Company number of the meters they turn off and corresponding apartment numbers.
6. Require crew members to report any difficulty.
7. Require crew members to report completion of assignment at once.
8. Require crew members to return to headquarters upon completion of assignment, and stand by for further orders.
9. Make report of assignments on report form "D-2".
10. File completed orders in Emergency cut off file, section "E-d2".

Instructions to Crew Members of D2:

1. Execute apartment meter turn off orders as instructed.
2. Locate apartment manager if possible and deliver letter of explanation. If manager cannot be located, give letter to janitor.
3. Turn off all meters without exception.
4. Record on back of cut off order the Company number of meters you turn off and corresponding apartment numbers.
5. Report any difficulty encountered to crew captain.
6. Report completion of assignment to crew captain and return to headquarters to stand by for further orders.

Plan No. 5

Objects: Make radio announcements, turn on distribution system, check domestic meters and light pilots, check apartment meters, turn on industrial and commercial meters.

Personnel: Records division, materials and supplies division, and four work crews divided into suitable sections.

General Instructions:

Upon order of General Control Plan No. 5 will be executed.

(a) Plan Control will contact broadcasting stations and release announcements listed under "E-1". A report will be made of broadcasts arranged for, and actual broadcasting will be checked and recorded.

(b) Crews will turn gas into sections cut off under Plan No. 4. Any difficulties will be reported at once to crew captains, and reports will be made as soon as orders are executed. As soon as assignments are completed, crew members will stand by for orders.

(c) Crew captains will be issued meter route books, warning tags and instruction sheets by the Plan Control—Records Division, and necessary materials and supplies as listed in general index will be issued by Plan Control—Materials and Supplies Division. These supplies will in turn be issued by crew captains to crews.

In checking meters calls will be made in the same sequence that addresses appear in the meter route book. Meters will be turned on and service resumed only where meter record shows meter active. It is important that every appliance is turned off and that all pilots are lighted. Safety pilots that do not function promptly should be passed up and the appliance turned off. When completed, make record in the route book by placing a small O.K. after the meter number of the meter turned on. If any condition prevents completing the turn-on, make notations on the memo sheets in the route book, showing address, meter number and reason for not completing order. If access cannot be gained, place a red warning notice on *all* outside doors of the dwelling unit.

Apartment house meters will be turned on by either crews "E-3" or "E-4", or both, as directed by General Control. Apartment house meters to be turned on by Crew "E-4" will be indicated on Route Sheets.

Speed is essential and under no circumstances should time be wasted in conversation or in any other way, except when necessary to the safety of the customer.

Any unusual conditions which you cannot handle will be reported to the crew captain at once. As soon as the route book issued is completed, report to the crew captain.

(d) Crew members assigned to check and turn on apartment meters will turn on meters and light pilots. If unable to get in an apartment, he will leave a red warning card on door and report case to team captain. *Do not turn on meters which you do not have an order for.* Only active meters are to be turned on.

(e) Crew mmebers so assigned will call industrial and commercial customers listed in Plans 3, 2, and 1, advising them that gas is available. Customers listed in Emergency cut off file, section "E-5" will be checked by crew members assigned, who will check meters, light pilots and do other work necessary to resume service.

*Special prepay meter route sheets inserted in regular route books by Records Division at request of Plan Control No. 4.

Instructions to Records Division:

1. Insert memo sheets from Emergency cut off file, section "E-3" in meter route books.
2. Issue and record issues of meter route books.
3. Receive and record return of meter route books.
4. Review memo sheets in returned meter route books and other emergency turn-on orders and prepare necessary service orders.
5. Prepare necessary records, special orders and instructions upon order of General Control.
6. Return all necessary instructions and emergency work orders to emergency cut off file.

Instructions to Materials and Supplies Division:

1. Have available in stock the following tools and supplies:
   - 300—Lighter Wires
   - 300—10 in. Pipe Wrenches
   - 300—Pr. Pliers
   - 300—Screw Drivers
   - 300—Boxes of Thumb Tacks (50 Tacks to Box)
   - 300—Flashlights with bulbs and batteries
   - 300—Rolls of Friction Tape (small)
   - 300—½ Bars of Octagon Soap
   - 300—Pencils
   - Red Warning Tags
2. Upon order of General Control, issue and record issues of tools and supplies to crew captains.
3. Receive and record return of tools and supplies by crew captains.
4. Prepare record of shortages in tool and supply returns.
5. Promptly reorder tools and supplies to replenish stock.

Instructions to Crew Captain E2:

1. Assign crew members to open valves to turn on districts as ordered by Plan Control.
2. Require crew members to report any difficulty encountered in the execution of orders.
3. Require crew members to report completion of assignments.
4. Require crew members to return to headquarters at once upon completion of assignments.
5. Make report of assignments on report form "E-2".

Instructions to Crew Members E2:

1. Open valves to turn on districts strictly in accordance with instructions on your orders.
2. Report to crew captain any difficulty encountered.
3. Report completion of assignment to crew captain.
4. Upon completion of assignment return to crew headquarters and stand by.

Instructions to Crew Captain E3:

1. Have available for each crew member the following:
   a. Tools (Obtain from Materials and Supplies Division)
      - 1—Lighter Wire
      - 1—10 in. wrench
      - 1—Pr. pliers
      - 1—Screw driver
      - 1—Box Thumb Tacks
      - 1—Flashlight with bulb and batteries
      - ½—Bar soap
      - 30—Red warning tags
      - 1—Pencil

   b. Route books to be issued (Obtain from Records Division).
2. Issue and record issues of tools, supplies and route books to crew members.
3. Crew captains will be held responsible for all tools, supplies and route books issued to their crews.
4. Instruct crew members as follows:
   a. Call on all customers in same sequence they appear in route books.
   b. First be sure all appliances are turned off.
   c. Light all pilots and turn on automatic appliances.
   d. Turn on only meters shown active in meter route books.
   e. Apartment house, industrial and commercial meters to be turned on by other crews will be indicated on meter route sheets. Do not call on these customers unless instructed to do so by Plan Control. Turn on all other meters in the route sheets. In the event that the route sheets indicate that your crew member is to turn on a portion of the meters for individual apartments in one building and that balance of apartment unit meters are to be turned on by other crews, turn on all active apartment unit meters in the building and record turn-on in route sheets. You will receive instructions from Plan Control if your crew is to turn on apartment house meters for central water heating and heating.
   f. Special route sheets for prepay meters will be inserted in regular meter route books. Appliances on prepay meters should be checked in the same manner as other non-automatic appliances.
   g. Do no adjusting or repairing. If an appliance does not operate satisfactorily, turn off pilot and cut it off.
   h. Make record on memo sheets in route book if any appliances are left off, any premises which cannot be entered or any other condition which prevents renewal of full service.
   i. If admittance cannot be gained, put red warning tag on *all* doors in such a manner that the tag must be removed before key can be inserted into lock. Turn off meter if it can be reached.
   j. Record all complete turn-ons, including prepay meters, by entering an "O.K." after the meter number in the route book. If gas will not pass through prepay meter and customer does not have coin to insert in meter, make sure all appliances are off and leave meter on; record turn-on by entering "NC-AO" after meter number in route book.
5. Require crew members to report unusual conditions and completion of assignment to captain at field headquarters.
6. Require crew members to return to field headquarters when assignment is completed.
7. Make report on report form "E-3".
8. Return route books to Records Division and tools and supplies to Materials and Supplies Division.

Instructions to Crew Members E3:

1. You will be issued tools, supplies and meter route books for which you are responsible to the crew captain.
2. Call on all customers in the same sequence they appear in the route book. Prepay meters are indicated by a special route sheet and are to be handled in same manner as other meters.
3. Apartment house, industrial and commercial meters to be turned on by other crews are indicated on meter route sheets. Do not call on these customers unless instructed to do so by your captain. Turn on all other active meters in your route sheets. In the event that the route sheets indicate that you are to turn on a portion of the meters for individual apartments in one building and that balance of apartment unit meters are to be turned on by other crews, turn on all active apartment unit meters in the building and record turn-ons in route sheets. You will receive instructions from your captain if you are to turn on apartment house meters for central heating and water heating.
4. Be sure all appliances are turned off.
5. Light all pilots, turn on automatic appliances. (Light pilots on automatic appliances first—check them after lighting other pilots).
6. Turn on only meters shown active in route book.
7. Do no adjusting or repairing. If an appliance does not operate satisfactorily, turn off pilot and cut off appliance.
8. Make record on memo sheets in route book of any appliances left off, any premises which cannot be entered or any other condition which prevents renewal of full service.
9. If admittance cannot be gained, put red warning tag on *all* doors in such a manner that the tag must be removed before key can be inserted into lock. Turn off meter if it can be reached.
10. Record all complete turn-ons, including prepay meters, by entering an "O.K." after the meter number in the route book. If gas will not pass through prepay meter and customer does not have coin to insert in meter, make sure all appliances are off and leave meter on; record turn-on by entering "NC-AO" after meter number in route book.
11. Report unusual or dangerous conditions to crew captain at once at field headquarters.
12. Report completion of assignment to crew captain at field headquarters.
13. Return to field headquarters.

Instructions to Crew Captains E4:

1. Have available for each crew member the following:
   - Tools where required
   - Red warning tags
   - 1 pencil
   - Apartment meter turn-on orders, Emergency cut off file, Section E-4.
2. Issue supplies, tools where required, and turn-on orders to crew members.
3. Crew captains will be held responsible for all tools, supplies, and turn-on orders issued to their crews.
4. Instruct crew members as follows:
   a. Call on all customers in the sequence that the turn-on orders have been routed.
   b. Turn on only the apartment houses directed by Plan Control as some of these meters may be delegated to other crews.

c. First light pilots and turn on central heating and central water heating appliances.
d. Instruct crew members to call at all apartments in building to cut off all appliances and record on turn-on card all apartment numbers to be turned on. Only the meter numbers indicated on back of turn-on card are active. In the event a customer insists that their meter was active and you have no turn-on order for it, turn on meter and report it to Records Division.
e. Record all meters turned on by entering "O. K." after meter number. Record all active meters which cannot be turned on by entering "No" after meter number.
f. Light all pilots and turn on automatic appliances for each active meter.
g. Do no adjusting or repairing. If an appliance does not operate satisfactorily, turn off pilot and cut appliance off.
h. Make record on "turn-on" order of any appliances left off, any apartments which cannot be entered or any other condition which prevents renewal of full service.
i. If admittance to any apartment cannot be gained, put red warning tag on all doors to that apartment in such a manner that the tag must be removed before key can be inserted in lock. Leave meter cut off.

5. Require crew members to report unusual conditions and completion of assignment at once.
6. Require crew members to return to headquarters designated by crew captain when assignment is completed.
7. Report to Plan Control completion of assignment. If no further assignments are delegated to you, send your crew members to Crew E-3, Shop Office.
8. Make report on report form "D-2-E-4".
9. Return tools and supplies to Materials and Supplies Division.

Instructions to Crew Members E4:

1. You will be responsible for tools, supplies, and turn-on orders issued to you by the captain.
2. Call on all customers in the sequence that the turn-on orders have been routed.
3. First light pilots and turn on central heating and central water heating appliances.
4. Call at all apartments in building *to cut off all appliances* and record on turn-on card all apartment numbers to be turned on.
5. Only active meters can be turned on. These are indicated on the turn-on order. In the event a customer insists that his meter was active and you have no turn-on order for it, turn on meter and report it to your crew captain.
6. Do not turn on gas to an apartment unless an occupant of the apartment, the janitor, or manager is present.
7. Record all meters turned on by entering "O.K." after meter number. Record all active meters which cannot be turned on by entering "No" after meter number.
8. Light all pilots and turn on automatic appliances. (Light pilots on automatic appliances first—check them after lighting other pilots.)
9. Do no adjusting or repairing. If an appliance does not operate satisfactorily, turn off pilot and cut appliance off.
10. Make record on turn-on order of any appliances left off, any apartments which cannot be entered or any other condition which prevents full renewal of service.
11. If admittance to any apartment cannot be gained, put red warning tag on all doors to that apartment in such a manner that the tag must be removed before key can be inserted in lock. Leave meter cut off.
12. Report unusual or dangerous conditions to crew captain at once.
13. Report completion of assignment to captain as soon as your assignment is completed. Stand by for further orders.

Instructions to Crew Captain E5:

1. Assign crew members 2 through 5 to call customers Class "A" and "B".
2. Assign crew members 6 through 15 to check and turn on customers Class "C", and issue tools and red warning tags.
3. Instruct crew members as follows:
   a. Be sure all appliances are off.
   b. Light all pilots.
   c. Make no adjustments or repairs—leave appliances off which do not operate.
   d. Make report to team captain of appliances left off or premises which cannot be entered and record on orders.
   e. Leave red warning tags on all doors of premises which cannot be entered.
   f. Record all complete turn-ons on orders.
4. Require crew members to report unusual conditions and completion of assignments.
5. Require crew members to return to headquarters as soon as assignments are completed.
6. As soon as crew members have returned to headquarters, send them to crew "E-3", Shop Office.
7. Make reports on report form "E-5".

Instructions to Crew Members E5, 2 through 5:

1. Call customers assigned to you, advising them gas may be turned on, and giving such other information as instructed.
2. Report comments and completion of assignment to crew captain.
3. Stand by for further orders.

Instructions to Crew Members E5, 6 through 15:

1. Call on customers included in your assignment to renew gas service.
2. Turn on gas—light all pilots.
3. Make no adjustments or repairs; leave appliances off which do not operate.
4. Make report to crew captain of appliances left off or premises which cannot be entered. Record on orders.
5. Leave red warning tags on all doors of premises which cannot be entered.
6. Report all unusual conditions.
7. Report completion of assignment, return to headquarters and stand by for further orders.

Already prepared and placed in a special emergency file are all the instructions, record forms on which to report on the progress and the completion of all operations, together with the lists of those employees assigned to each of the crews engaged in carrying out the various steps of each of the five plans. These lists of employees include their names, their addresses and their telephone numbers.

Nothing has been left to chance. Instructions to the crew captains specifying their duties have been prepared and distributed, and the instructions that the crew captain must give to his crew have likewise been prepared and distributed. All training of the employees has been conducted in line with these instructions.

This planning and training in advance of any possible catastrophe in Atlanta seemed wise not only to protect the company's domestic customers, but also to insure continuance of service.

So thorough have been the precautions taken by the company that customers themselves will have little to do in an emergency except follow the published advice to keep calm—a state of mind made possible by the fact they know the company is adequately "prepared for disaster."

REPORT FORM "A" - "E-5"

Date _____

Customer's Name	Wk.Gr. No.	Ph.Gr. No.	Request Off Time	Request Off By	Check Off Time	Check Off By	Permit On Time	Permit On By	Check On Time	Check On By	Avg. Use

FIG. 7. All of the report forms, of which this is one sample, used to record any of the multiplicity of operations ordered during the emergency period have been prepared in advance and are stored in special files. Such regular forms as are needed are issued by the Records Division, and usually carry a special insert to permit the filing of memoranda covering their use in the special emergency file.

Industry Reports on Rubber Conservation

ALL America is rubber conscious. Every thought and consideration, from the War Production Board to the man in the street, is being given to the curtailment in manufacture and the care in the use of rubber and rubber products.

Issuing the first order of its kind, WPB, in Supplementary Order M-15-B-1, on February 11 laid down stringent rules for manufacturers to follow in the production of various essential rubber products. Savings of at least 25,000 tons annually are expected to result from the program.

Most of the savings—at least 10,000 tons annually — will be accomplished under the specifications for tires and tubes and capping stock for civilian use. There will be aproximately 15% less new rubber in civilian tires. Separate specifications are set forth for tires and tubes to fill war orders.

As an example of the drastic revisions made in manufacturing practices, the order prohibits use of more than 7½ ounces of crude rubber in a bicycle tire, complete with tube. Manufacturers have been using approximately 17 ounces.

The following paragraphs outline in some detail steps taken by gas utilities to conserve rubber.

Brooklyn, N. Y.: (Report from Hugh H. Cuthrell, vice president, The Brooklyn Union Gas Co., Brooklyn, N. Y.) Due to the government restrictions on rubber and the necessity of curtailing the use of rubber tires, we have four things, as follows:

1. Out of a passenger car fleet of 65 cars, we have laid up, or put in reserve, a total of 21 cars, or approximately one-third.

2. Of the cars remaining in service, we have greatly curtailed the mileage by various means, such as changing the place of garaging; by urging the men to use other means of transportation where possible; by having two or more persons combine, or so arrange their activities that one car will serve the purpose; and by prevailing upon the men making use of passenger cars to put off or delay making certain trips until such time as they have more than one mission to accomplish while they are drilling.

3. For certain operations we have seen fit to hire additional employees to accomplish work previously accomplished by the use of automobiles.

4. In our customers' service activities, we are re-arranging our work schedule so that fewer trucks will be necessary to accomplish the work than previously.

Realizing as we do the desirability of having rubber tires flexed frequently, we plan to interchange cars that have been laid up with cars that have remained in service, so that no tires will become hardened and cracked from disuse. As time goes on, the tires on the cars that have been taken out of service will be used on active equipment. Re-capping and re-treading is being resorted to wherever possible.

Pittsburgh, Pa.: (Reports from three gas utility companies.) Steps to conserve rubber taken so far by three of Pittsburgh's gas utility companies show results, with improvements continuing. In one case there has been an estimated 60% replacement of rubber articles; in another instance an estimated 25% reduction of mileage on tires.

The three gas utility companies queried were Manufacturers Light & Heat Co., Equitable Gas Co., and Peoples Natural Gas Co. Superintendents of distribution (of the respective companies) interviewed were A. J. McClellan; Theodore H. Kendall and his associate, Jack Page, and L. E. Ostrye.

Survey showed that serious planning to prolong the wear of rubber goods in stock started in December, with one program starting on January 1 and getting well underway by January 22. Gas-company spokesmen stressed (1) the size and scope of making the change-over, (2) that they had made obvious changes immediately, (3) that other changes will occur as recognized, (4) that continued progress on changes made to date will result by evaluating the consequences of thase changes.

The planning resulted in the gas companies doing four things to conserve rubber: (1) reducing repeated service calls, (2) using different gasket material, (3) welding pipe points together, (4) substituting materials in company buildings.

In urban service the greatest change was in taking off the road a great number of passenger cars and half-ton trucks answering service calls and delivering light materials. Now, too, pressure charts are picked up only in "critical weather." Restriction on this light-vehicle travelling has resulted, in one instance, in the cutting of 25% from the monthly mileage of cars registering 2000 miles a month.

TIMELY TIPS ON TIRE CONSERVATION

1. Speeding. Tires are estimated to last twice as long at 40 m.p.h. as at 60 m.p.h. Government studies have revealed that tire costs at various speeds per 1000 miles are: at 25 m.p.h. $1.50, at 35 m.p.h. $3, at 45 m.p.h. $4.50, at 55 m.p.h. $7.50, at 65 m.p.h. $10.50.

2. Inflation. Check tires for proper inflation at least once a week. Five lbs. underinflation is estimated to reduce tire life by 25%. Over inflation also causes excessive wear on the center treads.

3. Starts and Stops. Fast starts and quick stops wear off the tread rapidly even if wheels are not spun on the starts, nor brakes locked on the stops. Acceleration should be smooth and easy on starts, and deceleration accomplished as much as possible by motor compression.

4. Wheel Alignment. A misalignment of only one-half inch will drag a tire sideways 87 feet in every mile. Twice a year checks of wheel alignment are recommended.

5. Minor Repairs. Cuts, leaks and breaks that are small in themselves can lead to complete breakdowns of the carcass if left unattended. Blowout patches are at best a makeshift remedy. Cuts and breaks should be vulcanized immediately whenever possible.

6. Bruises. Striking curbs, rocks or other road obstructions causes hidden damage that is not apparent at the time but which leads to broken cords and blowouts later.

7. Tire Rotation. Shifting wheels from front to rear and from side to side helps to equalize wear on all. Spare tires should also be included in the rotation. Several sequences have been recommended. One advocates moving tires from front to rear every 5000 miles. Another counsels shifting crisscross with the spare tire going to the left front, the left front to the left rear, the left rear to the right front, the right front to the right rear, and the right rear to the spare. Using the spare tire regularly cuts the mileage of each of the five tires to 16,000 miles out of 20,000 traveled.

8. Curves. Speeding around curves burns off treads aside from being dangerous. Slow down before entering curves and come out slowly.

9. Tire Sizes. Tires should fit the rims. A competent garage man can check this item very easily.

10. Balanced Wheels. Wheels that are in balance make the vehicle ride easier and reduce uneven wear of the tires.

11. Accidents. Besides the minor drawbacks of being expensive and sometimes causing the loss of an arm, a leg, or a life, smash-ups frequently result in the complete destruction of a tire. Drive carefully and save a tire.

Out in the field in the tapping of main lines to seal connections between the appliance and the main line, rubber gaskets were replaced by cork, asbestos, and paper. In another case (except for joints) the connections are welded.

Plan to save rubber has resulted in decentralization in the handling of personnel. Before, the company truck "made *a meter* replacement for calibration." Now, the company delivers *a load* of meters for calibration. And instead of riding the truck, the service man travels by bus or trolley on his calls. When work is completed the truck picks up *a load* of used meters.

In company buildings, on office floors, rubber floor runners were taken up. In some cases no substitute has been used; straw mats protect the floors near outside doors. In meter rooms, reports one source, we have curtailed use of rubber "all the way through." Last year, for example, we replaced 70,000 meters. Some of these had a synthetic-rubber diaphragm.

Columbus, Ohio: (Report from A. E. Bradbury, manager, Motor Transport Department, The Ohio Fuel Gas Co., Columbus, Ohio.) In this company we are at the present time taking from service a number of cars and their respective territories have been consolidated with others, which is really a doubling up of men on each piece of equipment.

We are handling our emergencies as we have in the past, but the regular services such as turning on and off gas, making appliance adjustments and installation of new equipment is being handled on a time basis, that is, we are executing orders up until a certain time of the day. Orders coming in after that time are held over until the following day.

We have rerouted practically all of our districts so that the two-man trucks are operating in such a manner that one man is dropped off while the other man goes to make a call farther on, and then a pick-up of the first man is made.

We have created a pool of passenger cars in our various divisions, and supervisory men are scheduling their trips so that one car is used for a group instead of each man having his own transportation.

Drivers of company equipment have been instructed to reduce speeds on all equipment, and checks are made of tire pressurees. The use of train and bus service has been used considerably in our organization wherever possible. We expect to reduce mileage further by changing our methods of collection, meter reading, etc.

Cleveland, Ohio: (Report from G. R. Binder, The East Ohio Gas Co., Cleveland, Ohio.) We immediately put as many of our men as we possibly could on foot. All our calls are carefully investigated, eliminating as many calls as possible and taking care of as many calls as possible in sequence, thus cutting down the number of emergency calls. Both of these measures have reduced automobile mileage and usage. We have stressed to all of our people that tires are valuable items and that they must be carefully used. We expect to make changes daily to conserve our present supply of rubber.

PRICE CEILING FOR RETREADING (TRUCKS)

The following ceiling on prices for tire retreading and recapping, showing the maximum charge for (1) the most expensive grade of camelback and the deepest tread and (2) the second most expensive camelback and the next deepest tread, was set recently by Price Administrator Henderson:

Size—	*Basic Tire Carcass*	*Retreading* (1)	(2)	*Top Capping* (1)	(2)
6.00-20 (30-5) (6-ply)	$ 4.20	$ 7.60	$ 6.75	$ 6.50	$ 5.70
6.00-20 (30-5) (8-ply)	6.00	8.85	7.80	7.50	6.55
6.50-20 (32-6) (8-ply)	6.00	12.45	10.95	10.55	9.30
6.50-20 (6-ply)	4.50	10.00	8.80	8.50	7.45
7.50-20 (34-7) (10-ply)	9.60	16.20	14.25	13.80	12.10
7.50-24 (38-7)	7.20	17.15	15.05	14.60	12.85
8.25-20	10.80	21.85	19.15	18.55	16.30
9.00-20 (36-8)	12.00	25.35	23.15	22.35	19.70
12.00-20 (11.25-20)	16.80	43.95	38.60	37.35	32.85
12.00-24 (11.25-24)	16.80	47.45	41.75	40.30	35.40
9.00-36 (11-36) (tractor)	9.90	34.50	.....	.....	.....

Hammond, Ind.: (Report from J. M. Pickford, assistant supervisor of gas operations, Northern Indiana Public Service Co., Hammond, Ind.) Our company operates throughout the north central portion of Indiana. Although our plans are still in the formative stage, we have to date reduced driving to some extent by doubling up on trips into the territory.

In several of the districts meter changes are being routed by location rather than by years. This means that some of the meters changed will be of a period less than the prescribed change period and a few will be slightly over. Eventually the system will give us a very high percentage in the correct change period. The budget is to change a fixed percentage of the meters.

Another one of the districts (smaller) has worked out a system of inserting the meter number and age in service on every customer's ticket made up. The serviceman checks the order when he is out on a call and changes the meter if it is reasonably close to the change period.

Another district (large) has eliminated servicemen from going home to lunch in company cars. For long trips into the territory, trains are being used wherever possible.

Company men and company garages have been cautioned to avoid unnecessary speeds, to keep tires properly inflated, to switch tires around every 5000 miles, to examine tires carefully for bruises, flaws, nails, etc., and to avoid unnecessary quick stopping and injuring of tires by scraping against curbing.

Rubber was conserved and is being conserved by recapping of tires whenever possible. Chains are used only when absolutely necesary so as to avoid damage to the tires from the chains.

Tulsa, Okla.: (Report from C. U. Daniels, vice president, Oklahoma Natural Gas Co., Tulsa, Okla.) The restrictions recently placed on rubber have caused this company to materially reduce the use of company owned automotive equipment. The following steps have been taken:

1. General instructions have been issued requiring all employees to use railroad, bus, taxicab, and rent-a-car facilities whenever possible in the course of their work.

2. Transportation dispatchers have been designated in each district's headquarters and in other major cities. The dispatchers assign company cars for use where other transportation facilities are not available or feasible. The dispatcher acts as a clearing house so that there will be no duplication of car mileage.

3. Twenty-four-hour clocks on recording indicators are being replaced by 7-day clocks where possible to reduce chart changers' mileage. In addition to this, arrangements are being made with responsible individuals or companies near such recording indicators to change and mail charts to our offices.

No restriction on the use of cars has been imposed on men directly serving domestic consumers. Changes will be made in this service only as a last resort.

Bartlesville, Okla.: (Report from Geo. H. Baird, vice president, Cities Service Gas Co., Bartlesville, Okla.) Our company operates a natural gas pipe line system extending through or into several states. We sell gas at whole-

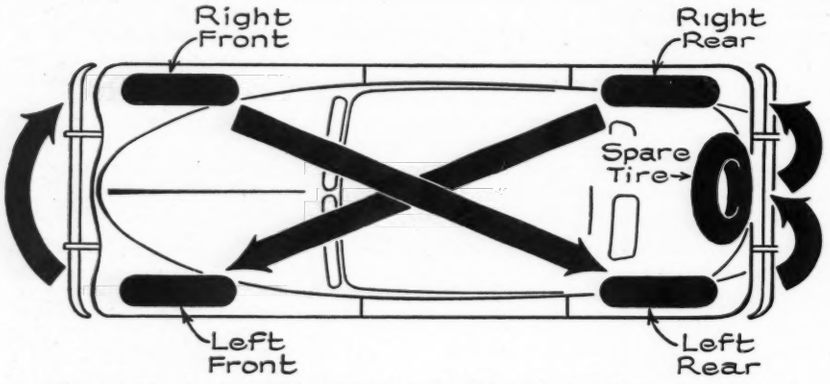


Diagram showing how shifting of tires every 5000 miles will conserve rubber.

sale and operate no retail distributing systems, and, therefore, our problems are much different from those of a utility serving customers at retail. Because of the scope of our operations we are very much aware of the necessity for conserving tires and automotive equipment.

We will reduce the mileage of our cars and trucks as much as possible by combining trips and by greater use of telephone, telegraph, railroads, busses and commercial truck lines. In addition, we have reduced allowable maximum speeds and are more rigidly enforcing our rules regarding the care of automotive equipment and tires.

New Orleans, La.: (Report from C. L. Nairne, general superintendent, gas department, New Orleans Public Service Inc., New Orleans, La.) Our system of handling service calls has been designed to limit the distance travelled to a minimum. Each of our service men report to our central dispatching office at the beginning of the day's work, where he is assigned several jobs in the same vicinity. Located throughout the city are 44 post telephones over which the men call the central dispatching office when the jobs originally assigned to them have been completed. On the same call they are given additional work in the same territory.

On busy days in the winter time a relatively large number of men are scattered throughout the city where their work can very easily be held within a mile radius.

On warm days when service calls are relatively few the distances that service men travel are greater. On such days the average time of answering a leak or "no gas" call is approximately one hour. The average time to answer a call which has been routed in the "less urgent" class is approximately two hours. We are now making every effort to carry over to the next day or thereafter all types of service calls where continuity of service or hazard is not involved. This will permit prearranged routing, which will result in cutting down the mileage covered. We are pursuing the same course with meter and service pipe installation orders.

Briefly, it may be stated that we are soliciting in an informal way, the cooperation of the public in stretching out the time of executing all orders that do not involve hazard or inconvenience.

Chattanooga, Tenn.: (Report from A. J. Goss, Chattanooga Gas Co.) One of the most serious problems we have today is the reconditioning and maintaining of our transportation equipment. In Chattanooga we have issued orders that no cars are to be used for private purposes. This is a matter about which we have been rather lax during the past few years.

All automobiles and trucks are serviced at regular intervals, oil changed, lubricated, and batteries and alignment of wheels checked. A permanent record of this servicing is kept in our office. A restriction is placed on speed to 35 miles per hour maximum on trucks and 45 miles per hour on passenger cars; we are considering governors for all trucks. Tires are inspected once each week and cuts are repaired immediately. A careful check is also made to keep tires inflated at recommended pressure. We have had very good service from recapped and retreaded tires but I am afraid we may have trouble from this source as I understand the material now being used for this purpose runs as high as 80% reclaimed rubber.

Anticipating a probable truck shortage, we purchased three new ones in December, at which time we planned on turning in a similar number of old trucks. We decided, however, to keep and recondition the old equipment—as it will no doubt be many months before we are able to make further purchases.

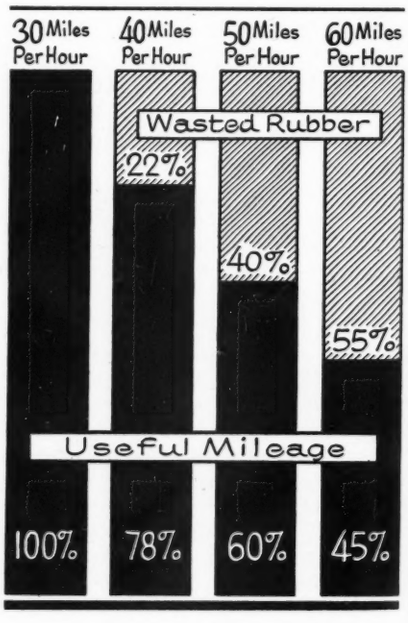
Dallas, Texas: (Report from Albert S. Johnson, president, Southern Union Gas Co.) Town plant and district managers of the Southern Union Gas System have joined with the executive department in planning a system-wide policy of curtailing the use of automobiles and conserving rubber during the war period.

A goal has been set up limiting automobile mileage in each plant and district to a maximum of two-thirds of last year's mileage. Naturally, this limitation is not on a month-by-month basis, but if an emergency necessitates an increase in mileage in any month over the corresponding month of 1941, it is expected that the mileage for the succeeding month or months will be even more carefully guarded to compensate for the excess.

This rule is not applicable to trucks, it being realized that an attempt to set an arbitrary mileage limit on these vehicles might result in lowering the standard of service. Each town plant and district manager understands, however, that he is expected to effect the greatest possible reduction in truck mileage.

This decrease in the mileage of company-owned cars and trucks is being accomplished by the doubling up of employees on different tasks. Service work is being more efficiently organized. Driving a car to avoid a walk of only a few blocks is being discouraged. Although strictly comparative statistics are not yet available, one district reports a reduction of 36% in passenger car mileage from December to January and a 15½% truck mileage reduction.

In some towns of the system, following an analysis of service calls, it



This chart, based on data compiled by the Firestone Tire & Rubber Co., reveals how tire mileage can be increased by intelligently planned speed reduction. (Courtesy the "Gas News," published by Southern California Gas Co.)

was found that probably three-fourths of all such calls could be made on bicycles, and bicycle service has been instituted. Incidentally, the bicycles being used have been equipped with speedometers, and it is expected that some interesting statistics will be available soon on the savings brought about by their operation.

All drivers of company-owned motor vehicles have had placed before them the following rules, which were issued by OPM as a guide for making automobile tires last longer:

Town plant managers and district managers of the Southern Union Gas System have been most cooperative, not only in pledging themselves and their employees to observance of these rules and other suggested methods of curtailing car use and conserving rubber but also in offering original proposals to that end. Individual employees are encouraged to submit ideas they believe would be helpful in the conservation program, and a number of suggestions offered by them have been incorporated in the system-wide program.

Dallas, Texas: (Report from Dallas Gas Co.) No immediate or drastic curtailment of use of motor equipment is planned. Trucks and other equipment are maintained in a central depot garage. Inspections of equipment are to be more rigid than ever. Thus far there are no definite plans for substitution of bicycles or other transportation. There is currently planned no possible decentralization of equipment to save mileage. In short, they are striving to achieve and maintain the maximum of efficient operation of individual units.

Houston, Texas: (Report from H. P. Carroll, operating manager, United Gas Corporation, Houston, Texas.) On January 20 we held a conference in Houston which all employees in a supervisory capacity attended, and in such meeting we outlined to our organization the necessity of conserving our transportation equipment. We asked our transportation superintendent to outline what each employee could do with reference to preserving our automotive equipment and extending the life of the rubber.

We have sent out a letter to our district managers in which we have asked them to make a study of each piece of automotive equipment with a definite suggestion that the mileage on such equipment be reduced considerably under the previous monthly mileage. We are also having our managers instruct their employees who receive service complaints to explain to the customers that such complaints will not be taken care of on the day they are made unless a hazard exists from a company standpoint. Otherwise, such complaints will be held and placed in a regular route form so that the service man can take care of them with the least possible mileage.

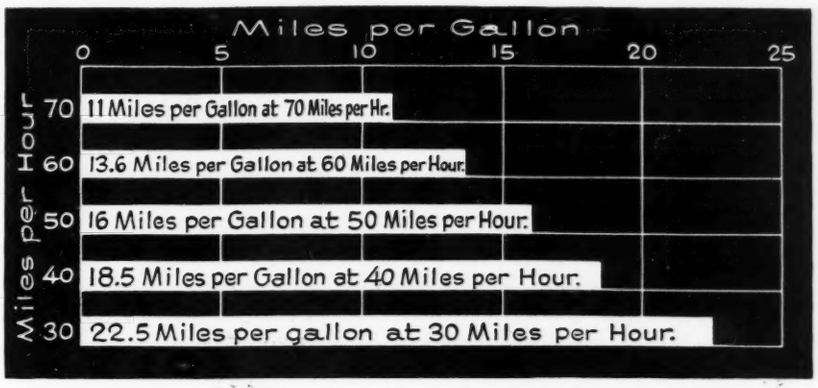


Chart showing how gasoline mileage decreases as speed increases.

We have sent out a letter to our be used by service men where only adjustments are required and it is not necessary to travel a great distance.

Portland, Ore.: (Bulletin on conservation of tires on salesmen's cars from John J. Winn, Jr., commercial manager, Portland Gas & Coke Co.) Today it is one of the most important functions of the salesman to see that the tires on his car receive the best possible care. Better sales planning is one of the best places to make a mileage saving. Try these ideas and watch the travel time drop and your income go up.

1. Do your canvassing all in *one location* and *on foot.*

2. *Route your calls* for the day before leaving the office. *Please check out with your supervisor.*

3. Where employee prospects indicate our call is expected, make an appointment by phone call to the customer. Let the suggestion for the hour of your call come from you. You may then select a time that will fit your work schedule as nearly as possible.

4. Salesmen whose territories are adjacent to each other and who live near each other may desire to alternate bringing one another to work in the mornings and back out to the territory. This would cut tire wear on this many miles in half.

San Francisco, Calif.: (Report from S. B. Shaw, Pacific Gas & Electric Co.) The part which the garage service personnel can best play in this work will be by concentration on the items listed below:

1. Inspection of tires on vehicles for abnormal wear that is indicative of wheel misalignment. All garage personnel should be instructed in inspection methods (See ASB 18-8) and should report conditions requiring attention.

2. Removal of tires for recapping before they are excessively worn (remove when worn smooth).

3. Salvage of damaged casings by prompt and proper repair. Damaged casings, otherwise suitable for recapping, should be repaired, recapped and re-used in areas and service for which suitable. Those not usable in local territory should be sent to central warehouse for reclamation.

4. Recapping should be only that of highest grade using best available tread stock (camel back) and of heavy gauge. Casings must be carefully inspected and any necessary repairs, costing up to a maximum of 25% of cost of new casing, should be made at the time.

5. Preventive maintenance inspection including particularly: (1) Carburetor mixtures—idling and float level adjustment; (2) ignition systems for condition of plugs, condensers, coils, points and wiring; (3) brake adjustments to eliminate severe brakes (only those shoes that are worn out should be replaced); (4) check of drive line and rear axle assemblies for excessive lash which may indicate need for minor repairs or adjustments.

In addition to the regular prevention maintenance inspection for which all vehicles must be regularly scheduled, personnel handling servicing operations, lubrication, washing, etc., should be instructed to observe and report any conditions needing attention, particularly, abnormal tire wear and excessive drive line lash.

There is no question but that every employee of the company personnel who is in any way concerned with the use, operation or maintenance of company automotive equipment is vitally concerned and interested in carrying out this program and conservation of the essential materials.

FIG. 1. Pipe Pincher—Hydraulic ram and frame for pipe diameter 2 in. to 6 in. steel.

Pipe Pincher Controls Broken Main Fires

IN ORDER to develop means for extinguishing gas fires and control escaping gas, the Southern California Gas Co., with the Southern Counties Gas Co. and the Pacific Lighting Corp., established an experimental ground where a crater was excavated. Gas at high pressure was provided, and regulators installed to furnish low pressure. The experiments are being carried on under the direction of W. M. Henderson, superintendent of distribution, Southern California Gas Co.

Experiments to develop equipment for fire control were run on steel pipe at high pressure, in sizes up to 6 in. diameter, and on low pressure, cast iron pipe, up to 12 in. diameter. This is a disclosure of a means for control for steel pipe.

As distribution by steel pipes at high pressure is not the practice in Britain, very little experience is recorded in any of the English reports on damage to steel substructure pipes and as to means for control of escaping gas. Pictures of a bombed area showed a large diameter steel main collapsed. This is very likely to occur even though the bomb does not register a direct hit.

This characteristic of steel suggests a way to control escaping gas from an open pipe-end by the application of mechanical force to crush the walls of the steel pipe.

Tests on the pressure required for deformation of pipe indicated the following:

Steel Pipe—2-in. diameter. Load 10 Tons.
Steel Pipe—3-in. diameter. Load 20 Tons.
Steel Pipe—4-in. diameter. Load 22 Tons.
Steel Pipe—6-in. diameter. Load 22 Tons.

An apparatus to accomplish the crushing effect in the field was assembled, using a 50-ton portable hydraulic ram. The ram weighs 60 lbs.; a frame, made from 5-in. channel, weighs 83 lbs., and the removable shear plates, 35 lbs. (See Fig. 1). The frame is designed for pipe sizes up to 6-in. When in place it straddles the pipe, after which the lower shear plate is placed, and the ram inserted. The power is produced by a hand-operated pump connected to the ram by a piece of high pressure hose.

In operation, the time required to pinch a piece of pipe is about one minute per inch diameter, which includes the assembling of the frame and ram in place.

A positive shut-off is not obtained, but the escape of gas, even at pressures of 35 lbs., is so reduced that the flame is very easily extinguished. (See Figs. 2 and 3.)

If a torch is applied to the pipe during the pinching, a complete shut-off is possible, and the tension stress, due to shrinkage, is relieved.

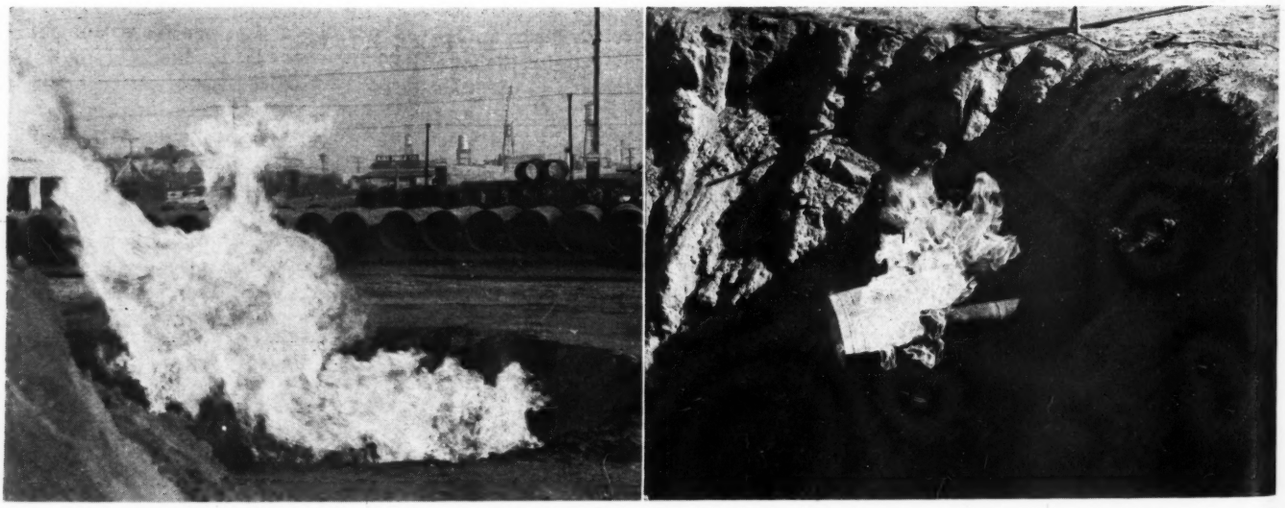


FIG. 2. (At left): Gas fire coming from broken pipe carrying 100,000 cu. ft. of gas at 35 lbs. to atmosphere through 4 in. steel pipe. The pipe pincher has not yet been applied. FIG. 3 (at right): The 4 in. steel pipe has been pinched. Even though there is 35 lbs. pressure back of pinch, the small amount of fire resulting from escaping gas is readily controllable.

Almost 400 Oil and Gas Field Discoveries in 1941

THE new oil and gas fields discovered in 1941 totalled 392, according to Indepen-Petroleum Association of America. As in other recent years, the discoveries credited to independent companies was nearly three-fourths of the total. The percentage was 73.2% or 287 fields by independents, with the larger companies accounting for 105 fields. Twenty-three of the discoveries were gas fields.

Seven states had more than 10 new fields added to the producing column in 1941. California had 12, half of which were found by the independents. Illinois was credited with 46, of which 78% were found by the independents. The others, with total new fields and percentage of independent discoveries, were: Kansas, 57 fields, 71.9%; Louisiana, 30 fields, 66.6%; Michigan, 18 fields, 88.8%; Oklahoma, 50 fields, 78%, and Texas, 135 fields, 75.5%.

The wells drilled in 1941 totalled 32,265 wells, of which 74.5% were drilled by the small companies. This was a gain both in percentage and wells from the 1940 total when the independents drilled 71.8% of the 30,560 wells. In 1941 the wells drilled totalled 95,874,474 ft., with the small companies accounting for 63.5% of the aggregate footage.

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Work Begun on Gas Line to Arkansas Defense Plant

Clearing of right-of-way, and welding operations for the construction of a natural gas line to supply Arkansas' Defense Plant Corp., were commenced several weeks ago. Fourteen cars of 18-in. and 12 cars of 12-in. pipe have arrived. The project consists of 93 miles of 18-in. and 31 miles of 12-in. Other pipe required for the program brings the total to 135 miles.

The line is being laid for Arkansas-Louisiana Gas Co., a subsidiary of Arkansas Natural Gas Corp., Shreveport, La. Construction of the line has been contracted by Mid-Western Engineering & Construction Co., which has established a field office at Malvern, Ark.

When completed the system will provide gas from the Columbia county, Ark., sour gas fields as fuel for plants near Bauxite and Lake Catherine, near Malvern. The main and branch lines will be built at an estimated cost of between $3,500,000 and $4,000,000. The lines will have 61,000,000 cu. ft. daily capacity.

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Arkansas Natural Gas Corp. To Construct 124-Mile Line

Arkansas Natural Gas Corp., Shreveport, La., is planning to build a pipe line from gas fields in the vicinity of Magnolia, Ark., to the aluminum plant which is now under construction at Malvern, Ark. The line will consist of 93 miles of 18-in. and 31 miles of 12-in. pipe. There will be three river crossings.

Contract has been let to Midwestern Engineering & Construction Co., which is considering establishing a field office at Malvern. The line has been authorized by the Federal Government with an A-1-A rating.

■ ■

Williams Bros. Corp. Plans 72-Mile Natural Gas Line

Williams Brothers Corp., Tulsa, Okla., is planning to build a 72-mile, 6-in. natural gas line for the Texas Pipe Line Co. from Salem to the Texas Co. refinery, Lawrenceville, Ill.

Pipe Line Extension Asked for Wisconsin

THE Federal Power Commission announced February 12 its receipt of an application by the Natural Gas Pipeline Co. of America, Chicago, Ill., for a certificate of convenience and necessity to construct additions to and extensions of its existing pipeline system to the cities of Milwaukee, Madison, Burlington, Racine, Waukesha, Sheboygan, Manitowoc, Two Rivers, Green Bay, Appleton, Fon du Lac, Oshkosh, Beloit, Janesville, and other cities and towns in southern and eastern Wisconsin. The application was filed pursuant to the provisions of Section 7(c) of the Natural Gas Act, as amended.

The applicant proposes to serve the eastern Wisconsin cities by extending its existing 20-in. main pipe line from its present terminus on the Illinois-Wisconsin boundary approximately 13 miles south of Burlington northward to Green Bay. Madison, Janesville and Beloit are proposed to be served by building an extension from the main pipeline northward to Beloit and Janesville, and thence to Madison.

According to the application, Natural Gas Pipeline will finance its proposals and is ready to construct the facilities and sell gas to the cities as soon as the required pipe and other material can be obtained. The company now has on hand sufficient material to construct about 22 miles of the main-line extension from the Illinois-Wisconsin line to a point immediately west of Milwaukee; has already acquired and now owns the right-of-way for the 22-mile portion; and has also purchased and now owns right-of-way from the 20-in. main line north to Beloit and to a point east of Janesville, together with part of the right-of-way from Janesville to Madison.

No natural gas is now being served in eastern and southern Wisconsin, the application says, and none of the utilities serving cities in these areas has access to a supply of natural gas. Applicant states that its entire existing facilities and organization and those of its affiliate, Texoma, will be utilized in supplying natural gas through the proposed extensions and much of the operating expense, including salaries of the entire organization, will be distributed over the entire system.

The applicant states that the introduction of natural gas in the areas will greatly expedite the production of defense equipment and materials by Wisconsin industries, "and the national emergency requires that natural gas be introduced into said great industrial area with the least possible delay."

The application continues, the introduction of natural gas "will make available to the people of said area natural gas at a cost substantially below the present cost of manufactured gas, and will make available to them a fuel more economical than coal, oil, and other fuels now being utilized in said area and at the same time add materially to the comfort and convenience of the homes of the people."

Natural gas to be marketed from the proposed lines would be supplied from that produced by applicant's affiliate, Texoma Natural Gas Co., in the Panhandle gas field in Texas and by purchase from the Colorado-Interstate Gas Co. Applicant's present pipe lines and facilities have a rated capacity of 260,000,000 cu. ft. per day, from which applicant would make immediately available capacity to supply the initial market requirements of the eastern and southern Wisconsin cities.

Applicant's existing capacity, it is claimed, would be adequate to supply its present and proposed markets for a number of years and additional capacity could be obtained as needed from its reserves in the Panhandle field and by calling on large reserves in the Hugoton field, which is located in Kansas, Oklahoma and Texas a few miles from its existing main pipe line.

■ ■

Texas Co. Gas Find May Prove To Be Large Field

As the Texas Co. has begun a third well in the Buttonwillow area of California it becomes evident that the company has opened up a new dry gas field of some importance. To date no figures on the potential capacity of the first two wells have been given, but according to unofficial reports the wells in the new field have demonstrated that they can produce between 10,000,000 and 15,000,000 cu. ft. per day.

In view of the threatened gas shortage in California, the field may turn out to be very profitable, it is believed. The producing sand is found at about 4700 ft.

■ ■

Cities Service to Construct Blackwell-to-Burbank Line

Cities Service Co., Bartlesville, Okla., will construct approximately 35 miles of 12-in. pipe line from the Blackwell, Okla., compressor station to the Burbank, Okla., field, where it will supply gas for repressuring operators. It will also connect with the company's present line system to that area.

Electric-welded pipe will be used; this will weigh 27.2 lbs. per lineal foot with 0.203-in. wall thickness. Solid welded construction will be used in laying the line. The company has been granted a priority rating for the pipe and construction will begin about April 1.

Tennessee Pipe Line Application Filed

THE Federal Power Commission announced February 12 its receipt of an application by Tennessee Gas & Transmission Co., Chattanooga, Tenn., asking for a certificate of public convenience and necessity to construct and operate a ntaural gas pipe line from southwestern Louisiana natural gas fields to Nashville, Chattanooga, Knoxville, and other Tennessee communities, and to deliver gas to existing gas pipe line companies for transmission into Ohio and Pennsylvania to relieve a threatened gas shortage in the Appalachian area.

The newly-proposed pipe line system will consist, according to the application, of gathering lines to transport natural gas to a point of convergence near Eunice, La.; a main line, 24 in. in diameter, to transport the gas through the states of Louisiana and Mississippi to a point near Muscle Shoals, Ala., and thence to Brace, Lawrence county, Tenn. From Brace, two main lines will diverge, one of which, either 16 or 24 in. in diameter, will transport gas to a point near Nashville, Tenn., and the other, 12¾ in. in diameter, will carry gas to a point near Alcoa and Knoxville, Tenn.

The construction of lateral lines to reach aluminum and chemical plants in Tennessee, certain plants of the Tennessee Valley Authority in Alabama and Tennessee, and the cities of Nashville, Knoxville, and Chattanooga, Tenn., is also contemplated. Construction of numerous lateral lines originally proposed to be built to serve many other communities and industries in the Tennessee Valley and western North Carolina must necessarily be postponed until after the war emergency, according to the application, although it is the stated desire and intent of the applicant to serve such communities and industries with natural gas as soon as possible after the conclusion of the war.

The proposed system is represented to have a delivery capacity, without any compression, of 155,000,000 cu. ft. per day, and with one 5000 h.p. compressor station located 282 miles from the beginning of the main line, the capacity of the line can be increased to 204,000,000 cu. ft. per day, the applicant says. With compressors at intervals of 94 miles, the available capacity at Brace, Tenn., can be increased to approximately 300,000,000 cu. ft. per day, it is claimed.

According to the application, the increase in size of pipe for the main line on the proposed system is required because the "immediate market demands in the region of the Tennessee Valley proposed to be served by applicant have been increased due to the additional requirements upon industries resultant from the war emergency. In addition," the application continues, "since there exists an imminent shortage of natural gas for industries in the states of Ohio and Pennsylvania, where the use of natural gas is necessary for war industry purposes, applicant's system will be enabled, by this increase in pipe line size, materially to assist in relieving that shortage. This can be accomplished by delivering natural gas from applicant's line to existing natural gas companies serving the Appalachian area, such as the Columbia Gas & Electric Co. system, the Hope Natural Gas Co. system (subsidiary to the Standard Oil Co. of New Jersey), and the Kentucky Natural Gas Co. system, thereby supplying and releasing natural gas for the use of war industries in that entire area."

It is maintained that the proposed line, in addition to rendering full service to the Tennessee Valley area, could make 100,000,000 cu. ft. of gas per day available to the Appalachian area with a single compressor station; and that with full compression, not less than 200,000,000 cu. ft. could be delivered to companies serving the critical area.

The application contends that since the natural gas supply for the porposed system will originate in the "distillate fields" of southwestern Louisiana, and since the heavier hydrocarbons necessarily produced with such gas will have to be removed from it prior to delivery to applicant's pipe line, the consummation of the project would immediately afford to the nation a new supply of motor and aviation fuel amounting to from 72,000,000 gals. to 108,000,000 gals. annually, based on a recovery ratio of about 1000 gals. of natural gasoline for every million feet of natural gas produced.

Applicant's detailed studies indicate estimated recoverable reserves, to 1000 lbs. bottom-hole pressure, are 816,860,000,000 cu. ft., and it is stated that if additional quantities of natural gas are needed, they can be secured from other fields within economic reach of the company's gathering system.

The applicant states that it does not propose to sell gas at retail, but "to sell such gas only to industrial plants engaged in the production of war essentials and to such other gas pipe line systems as may be determined to deserve first call because of the extent to which they are vital to the present war effort," and that "the sale of natural gas by applicant at city gates to local distributing companies forms an important part of its ultimate purpose, but during the war emergency such city gate sales will be subordinated to the requirements of defense industries."

■ ■

President Approves Natural Gas Act Amendments

President Roosevelt on February 7 approved amendments to Section 7 of the Natural Gas Act, according to releases issued by the Federal Power Commission, Washington, D. C.

Section 7(c) as amended requires all natural gas companies engaged in the transportation or sale of natural gas subject to the jurisdiction of the Commission to have a certificate of public convenience and necessity from the Commission authorizing their operations. Under the amendment to Section 7(c), the Commission shall issue a certificate covering existing operations without requiring further proof that public convenience and necessity will be served by such operations and without further proceedings if the application for certificate is filed with the Commission by May 8, 1942.

The newly-added Section 7(f) of the Act empowers the Commission, after hearing had upon its own motion or upon application, to determine the service area to which each certificate is to be limited. Rules and regulations with respect to the administraion of Section 7 as amended will be announced by the Commission in the immediate future.

■ ■

Phelps-Dodge Uses Natural Gas for Smelting Operations

The huge copper smelting works of the Phelps-Dodge Corp., in Morenci, Ariz., is using natural gas, served by a direct main line of the El Paso Natural Gas Co., in its operations. Additional miles of pipe to be laid by the gas company construction crews next summer will make available a sufficient supply of gas to serve this growing industry.

Capacity of the plant approximates 75,000 tons of copper annually. Thirteen mining benches have been established in the open pit. It was necessary to remove approximately 46,000,000 tons of waste over-burden before reaching the ore production. Tracks are electrified from the ore benches to the primary crushing plant at the reduction works. The smelter stack is 600 ft. high.

■ ■

Arc Welding Film Made To Speed Defense Training

"Inside of Arc Welding," a color film produced by Raphael G. Wolff Studios, 1714 No. Wilton Place, Hollywood, Calif., which offers visualized training in arc welding is now ready for release.

Designed to speed up the training of apprentice welders required for the building of ships, planes, tanks, and other armaments, the film illustrates the techniques of arc control and electrode manipulation, and shows what goes on inside the electric arc enabling the arc welder to follow the work in a very detailed manner.

FPC Conducts Survey on Natural Gas Operations

THE Federal Power Commission announced February 16 its transmittal to every major natural gas producer, pipe line company and distributor in the country of a request for basic operating information to be used by the Commission and other governmental authorities to assure natural gas supply to war industries. The information is requested by March 31, 1942, and is similar to that recently obtained by the Commission, in cooperation with the Office of Production Management, from all natural gas companies east of the Mississippi River and north of Tennessee and North Carolina to work out methods to avert a serious shortage of natural gas which threatens certain sections of the Appalachian area next winter.

A total of 356 companies have been asked to submit information with respect to physical properties, together with actual 1941-1942 and estimated 1942-1943 figures on system gas balance and system peak day deliverability and demand; transmission system deliveries; distribution system sales; major industrial deliveries; and gas reserves and production owned or controlled through purchase contracts.

■ ■

OPC Begins Steel Salvage In Rehabilitation Program

The immediate undertaking by the petroleum industry of a steel salvage and equipment rehabilitation program has been requested by Petroleum Coordinator Harold L. Ickes.

Pointing out that there is urgent need for scrap iron and steel to meet requirements of the war effort, Coordinator Ickes said that literally thousands of tons of scrap could be assembled by the petroleum industry and turned back into the channels of trade.

Outlining the scope of the program, Deputy Coordinator Ralph K. Davies said it probably would range all the way from the rather simple operation of gathering scrap to the extreme of digging up unused pipe lines and cutting up obsolete refining units.

Mr. Davies recommended that industry undertake concurrently to rehabilitate units which can be made serviceable by new parts or minor repairs and thus eliminate the need for new similar units, the manufacture of which would require long hours of machine operation.

■ ■

United Gas Applies to FPC To Determine Service Area

The Federal Power Commission announced February 16 its receipt of applications by the United Gas Pipe Line Co., an Electric Bond & Share Co. affiliate, asking (1) issuance of a certificate of convenience and necessity under the provisions of Section 7(c) of the Natural Gas Act, as amended, embracing the company's existing natural gas facilities and operations in Alabama, Florida, Louisiana, Mississippi, and Texas; and, (2) that a hearing be had under the provisions of Section 7(f) of the Act, as amended, to determine the service area or areas in which applicant is authorized to operate under its certificate.

The two applications are the first of their respective characters received by the Commission since approval by the President of amendments to Section 7 of the Natural Gas Act on February 7, 1942.

Limitation Order L-31

IN ORDER to assure adequate supplies of gas for war production, the War Production Board on February 16 issued Limitation Order L-31 governing the consumption of natural gas and mixed natural and manufactured gas throughout the United States. The order was deemed necessary because of the increased requirements for natural gas for war production and civilian use, coupled with the scarcity of materials that would be required if existing systems were to be expanded. The order does not affect utilities distributing only manufactured gas or only liquefied petroleum gases.

Parts of the order apply to the entire country, but do not become operative until a gas shortage occurs or becomes imminent. Other sections of the order became effective March 1 and apply in particular to the District of Columbia and the following 17 states: Alabama (except the area served by the United Gas Pipe Line Co.), Arkansas (only the area served by the Mississippi River Fuel Co.), California, Georgia, Illinois, Indiana, Kentucky, Maryland, Michigan, Mississippi (except the area served by the United Gas Pipe Line Co.), Missouri, New York, Ohio, Pennsylvania, Tennessee, Virginia and West Virginia. Orders affecting companies in these areas are:

1. They are prohibited from delivering gas for heating new homes, stoves, factories or other buildings, unless the heating equipment is installed prior to March 1, 1942, or the equipment was specified in the construction contract and the foundation under the main part of the building is completed prior to March 1. This applies to a heating system intended to furnish all or the major part of the heat for a home or building.

2. They are prohibited from delivering gas for the operation of heating equipment that has been converted from some other fuel to gas, unless such conversion is completed within 10 days of the issuance of this order.

Any utility or any governmental agency (such as a housing agency) affected by this prohibition against new and converted installations, which considers that the available gas supply is adequate for all existing and estimated future war requirements as well as unrestricted civilian use until April 1, 1944, may apply to the Director of Industry Operations for exemption.

3. They are prohibited from delivering gas to any new non-residential consumer or increasing delivery to any existing non-residential consumer, unless — (A) Such new or existing consumer has installed stand-by facilities sufficient to replace the new or increased delivery during period of shutoff, or

(B) Such new or existing consumer cannot reasonably use any fuel other than gas, or

(C) Approval shall have been granted in advance by the Director of Industry Operations for delivery to such new or existing consumer. This provision becomes effective 10 days after the issuance of the order.

Other provisions of the order applying to gas companies throughout the country and which become operative only when a shortage becomes imminent provide that gas consumption be conserved (1) by the integration of utility systems, and (2) by the reduction of service in the following order: (a) to all surplus consumers not engaged in war production; (b) through the operation of gas company standby equipment; (c) through reduction of service to firm consumers with standby facilities; (d) through reduction to service to all other consumers in a manner to cause the least interference with war production.

Interpretations of the order have been many. One from J. A. Krug, chief of the Power Branch, W. B. P., in reply to a request made by the Pacific Coast Gas Association, is as follows:

"You will note that paragraph (e) prohibits deliveries to new installations for central space heating equipment and heating equipment supplying the major portion of the heating requirements of the premises. Supplying the major portion means supplying more than fifty percent of the heating requirements of the premises. Thus, the sole question to be determined in each case is whether or not the appliance or group of appliances to be installed furnishes more than fifty percent of the heating requirements of the premises. The capacity of the equipment to be used, not the type or definition of equipment, is the determining factor.

"All heating appliances, whether fireplace heaters, gas radiators, circulating heaters, wall heaters, floor furnaces, or other types, are subject to the limitations of paragraph (e).

"Gas cannot be delivered to room heaters installed after March 1, 1942, if there is no other heat in the house, as the heaters would then constitute more than fifty percent of the heating requirements of the premises.

"If, however, other sorts of heating appliances are present and furnish more than fifty percent of the heating requirements of the premises, deliveries can be made to new space heaters designed to furnish the balance of the heat requirements of the premises."

Latest word, insofar as the order applies to new or old non-residential consumers is that Director of Industry Operations J. S. Knowlson has approved in advance a general exemption provided the daily average consumption does not exceed 10 M c.f. or that the gas is not used for space heating.

Further word from Mr. Knowlson,

states that exemptions from the restrictions of paragraph (d), which governs increased deliveries to non-residential consumers, would be granted in cases where gas heating equipment had been installed but not connected before March 1.

Relief from any of the restrictions of the order must be made individually under paragraph (f) to J. S. Knowlson, War Production Board, Materials, Power Branch, L-31 Unit, Washington, D. C.

One manufacturer of heating equipment has interpreted the order to mean (1) that in new construction furnaces can be sold and installed but that the gas cannot be connected; (2) that worn out equipment can be replaced with new furnaces if the quantity of gas used is not increased and if the old equipment is removed from the premises; (3) furnaces may be installed in a bedroom or any remote room where the major portion of the house is heated with other equipment; (4) the above statements apply to residential houses or construction only, and not to commercial jobs.

An Interpretation of L-31

By ROY A. WEHE

Gas and Electric Engineer, Railroad Commission of the State of California

WE HEAR from many sources today "How does the War Production Board Order L-31 affect me? ... What is the meaning of the order? ... Why was it necessary?". These and many other questions are being asked.

R. A. WEHE

Happily the order, though necessarily very broad, is nevertheless quite specific, and a careful study and analysis of it will afford the answers to many questions.

In the War Production Board press release on February 16, it said in part as to the necessity for the order: "The action was taken to assure adequate supplies of gas for war productions. It was necessary because of increased gas requirements for both war production and civilian use, coupled with the scarcity of materials that would be required if existing systems were expanded."

Thus the primary purpose of the order is to conserve and provide for the orderly use of natural gas to the principal end that war production may not be interrupted for lack of an adequate gas supply. The order doesn't cover the service of manufactuerd or liquefied petroleum gases except, where such may be used in conjunction with natural gas service.

As many other articles will likely deal with a close review of the provisions of L-31, this discussion will be limited to certain phases that appear to have a particular interest to the industry and to its customers in California.

At the outset it is believed appropriate to state that California finds itself with 16 other states under the provisions of L-31, not because its gas reserves have suddenly become inadequate, but rather because there is some doubt as to its ability to bring its gas to where it is to be used under future conditions. Thus there may develop deficiencies in the gas supply at centers of distributions. Such deficiencies could be brought about by a series of circumstances.

1. Load growth, without expansion in production and transmission facilities.*

2. Surplus or dump customers engaged in war production and without standby who will now require an uninterrupted gas service. Such consumers previously under civilian production were shut-off when the gas was needed. Now under war conditions it is obvious that this load must be served and will be directly added to peak load requirements.

3. A third item of importance that would result in a lessened gas supply would be a curtailment in oil production. As 90% or more of California's gas has in the past been produced in combination with oil, it is evident that a downward production in oil, especially from high gas-oil ratio wells, might seriously change the gas supply.

4. It is not at all improbable that certain gas lines might be taken over for transmission of oil. Such a change would unquestionably require additional and new gas facilities. The result of this should not reduce the total gas supply, although local differences might well be developed.

Thus, from these four points, it may be seen that large reserves in themselves do not insure an adequate supply of gas at the markets.

We in California have, to a degree, anticipated the new conditions arising because of the war. Early in 1941 the California Railroad Commission and the Department of Natural Resources started a state-wide survey as to gas reserves, available gas surplus, and consumer requirements for the immediate period and for some years in the future (GAS, December, 1941, page 16). Because of the swiftly moving events in the fall of 1941, the Commission, after public hearing, issued its iterim order in Case 4591 on November 26 which became effective December 16. This order particularly dealt with surplus or dumps industrial gas service and provided essentially that as a condition to all such new service, the customer was required to provide another source of fuel as standby. As to existing surplus customers, who could not comply with their contract requirements as to shut-off because they had provided no standby and who further had need of an uninterrupted gas supply because they were engaged in essential war production, then such customers would be placed on the regular or firm service basis. On this basis they would pay the regular firm rates until such time as adequate standby facilities were installed and ready for use.

It is clear that the purpose of the order was not to force surplus industrial consumers over to the higher cost firm service but to provide a real incentive to install standby fuel supplies. In California, with nearly 50% of the gas sales on a surplus basis, it becomes absolutely necessary that those purchasing on this basis, as a group, be ready to curtail and/or discontinue their use of gas when that gas is required for the essential firm service during the peak heating season. The consumer's order has been very effective in improving the unprotected surplus loads.

This brief background is given so we can approach the new federal order with a better understanding of California conditions. The questions are now being asked—What of the Railroad Commission order in view of

*Studies made late last year showed that the natural gas available at load centers and the essential consumer demands, under conditions of maximum loads, were nearly in balance, thus leaving but little margin for future growth without expanding facilities. There did and does exist, however, standby manufacturing facilities of considerable capacity.

L-31? Are the orders not in conflict?

The final answers to these questions can only come from the federal authorities and the California Commission itself. Yet while this is so views may be expressed that may prove helpful during this initial period. It can be said, without serious challenge, that if there be conflict, the federal order takes precedent. Happily, it is believed, there is little if any conflict, and each has a place, and each supplements the other. The federal order is one dealing with the gas supply and gas service, while the Railroad Commission order, while covering service to a lesser degree than the federal, goes one step further and covers matters of rates.

Each order recognizes the necessity of dual fuel supplies for new surplus industrial gas loads, but the federal order going further, requires standby to all new loads, other than residential and prohibits the expansion of the use of gas for space heating. The order further recognizes that gas supplied for war production has the highest preference rating and must not be interrupted. The order does not, however, require customer standby for existing surplus or dump consumers in war production, although it does require all war production customers to operate their standby, if they have the same, in order to release that much gas for other users—ahead of the operation of utility standby.

Limitation Order L-31 is silent on all matters relating to cost and rates. It would appear not to be an illogical interpretation to infer there is no intention on the part of the federal body to interfere with a state's regulatory powers of fixing utility rates. While L-31 provides for an uninterrupted gas service to defense industries, the rate to be paid for such service is that determined by the proper local authorities. Accordingly surplus and dump gas consumers in war production may not receive an uninterrupted service at the old interruptable rates.

The California interim order, heretofore referred to, in my opinion, will remain in full force and effect (possibly with some modification in wording, thus a supplemental order). Under the California order, a surplus customer, whether engaged in civilian or war work, after being notified there is no longer surplus gas available under the conditions of his contract, and if gas is continued to be used thereafter, the customer is no longer receiving gas under contract conditions, and at the contract rates. Such a customer will be required to pay the appropriate firm rate until such time as standby is installed and usable. To do otherwise and permit a surplus consumer to receive a continuous or firm gas supply at dump rates would without question result in gross discrimination and preference as between other similar consumers who had gone to the additional cost and expense of installing standby and operating the same. Likewise it is this very class of consumer, wh ocan use another fuel and who is unwilling to install standby, that is endangering the production of war materials.

The installation and requirement of a dual fuel supply should not be viewed as merely making available, for other essential uses, the gas thus replaced. California has been declared a combat area. We should be prepared to expect enemy action, in one form or another, that might possibly disrupt our gas supply. In addition outages may be expected from the action of the elements. Under these conditions a dual fuel supply appears well worth the price to give greater assurance for an uninterrupted war production.

The prohibitions in L-31 against new space heating and as applied to California is believed justified as long as the many uncertainties and unknowns of today exist. While this may be considered so, it may be that conditions in some sections will justify an exemption from this requirement.

The restrictions under increased deliveries to non-residential consumers appears to work an unnecessary hardship in California on a certain group of small and medium size commercial users in that general class. For this limited group of firm consumers, the installation of standby is generally not practical nor economically feasible. More important now, the likely increases in peak demands from this service cannot be viewed as material. (In offering this thought, space heating for commercials is excluded.)

It must be realized, too, that too restrictive and rigid requirements on gas will force new and added loads to the electric industry and, according to Federal Power Commission reports, the electric industry may be hard pressed to adequately handle the power loads ahead. It is not at all improbable that we all shall shortly see and feel the results of restrictive power measures.

In reviewing Limitations Order as a whole, one can hardly escape any other conclusion than that its sole purpose is one of helpfulness. It provides the means and the authority by which the gas industry can carry out its duty of distributing equally whatever gas is available. To the consuming public it insures a maximum delivery of gas in the most orderly manner and at the same time insures the major objective of an uninterrupted gas supply (as nearly as possible) to our war industries. It likewise has left, to the local regulatory bodies the matter of rates.

One far reaching gain to all from the order, long after its immediate need has passed, should be advantages realized from the integrations of common supplies and facilities. The orders should receive the full support of all—and when changes are necessary and can be justified there is no reason to expect from the order that they will not be granted.

A. G. A. Changes Advertising Policy

SINCE the United States entered the war, the American Gas Association Committee on National Advertising, headed by T. J. Strickler, chairman, has decided that an immediate change in advertising policy is imperative. Accordingly, all future insertions of 1942 advertisements scheduled for national consumer magazines, the closing dates of which have not expired, have been postponed as of January 15.

A new copy platform, together with key copy and layouts is now being prepared as the spearhead of an entirely new program to be developed in conformance with the country's war effort. The new consumer advertising will inaugurate:

"1. An intelligent, far-sighted and completely unselfish program planned to help the consumer feed her family better during this war-time emergency; and to promote such other Government-sponsored war activities as the Committee, in its judgment, believes the gas industry is singularly fitted to perform an outstanding public service.

"2. The basic character of the program for the immediate future will be devoted to maintaining a high standard of national health, with emphasis on nutrition, balanced diets and low-cost recipes, all tied-in with the Government's own effort."

Concurring with Mr. Strickler's program Alexander Forward, managing director, A. G. A., on February 4 formally adopted the resolution which follows:

"Resolved that the Executive Board of the American Gas Association expresses the hope that the Committee on National Advertising will continue its activities and will emphasize national emergency conditions in its copy in the way that will most effectively contribute toward the success of the war."

ASSOCIATIONS

S. G. A. Convenes in Atlanta

By CRAIG ESPY

THE theme, "How Can the Gas Industry Contribute Most Effectively Toward Winning the War," provided the basis of discussion for the streamlined Southern Gas Association and Gas Sales Conference held at the Biltmore Hotel, Atlanta, Ga., February 9-10. Almost 350 gas men registered at the convention which was presided over by H. Carl Wolf, Atlanta Gas Light Co., who is succeeded as president by L. B. Denning, Jr., of Community Natural Gas Co., Dallas, Texas.

Frank C. Smith, Houston (Texas) Natural Gas Co., was elected first vice president; Frank Kelly, Arkansas-Louisiana Gas Co., Shreveport, La., second vice president; and L. L. Baxter, Arkansas Western Gas Co., Fayetteville, Ark., was re-elected secretary-treasurer of the association. A. E. Higgins, Albert Sidney Johnson, L. O. Gordon and Maurice White were elected directors for one year and E. J. Stern, J. H. Warden, Jack M. Little and H. G. D'Spain were named two-year directors.

George S. Hawley, president, American Gas Association, spoke of the foresight of A. G. A. in collecting and distributing valuable material covering the protection of plants, distribution lines and other gas facilities. "We have an unsurpassed opportunity to demonstrate our capacities to serve our country in its hour of greatest emergency."

A. S. Johnson, Southern Union Gas Co., Dallas, Texas, made a number of suggestions for conserving old material and the using of new materials. In his talk he stressed the necessity for continuing to advertise. He pointed out that unless gas companies continue to advertise and give full cooperation in the war effort they may suffer a setback in the days following the war.

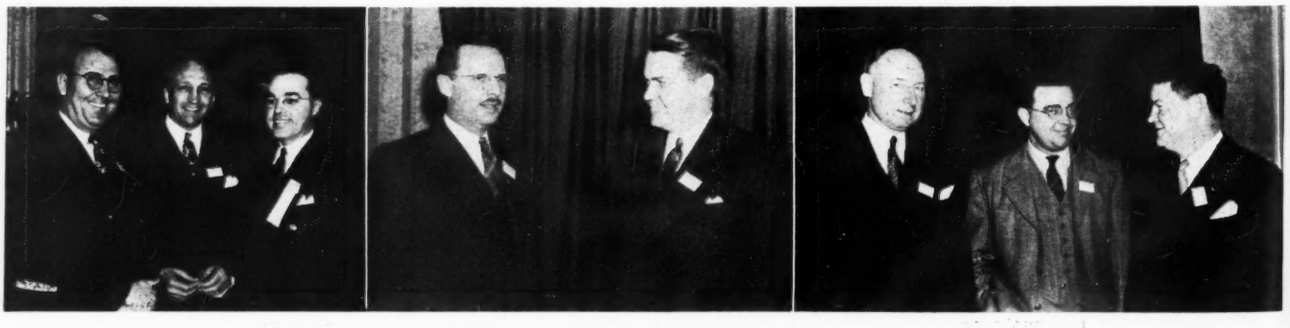
George F. B. Owens, Brooklyn (N. Y.) Union Gas Co., discussed the changing of the gas company's operations from a peace time to a war time basis. To get action, he said, the top executive must forcefully identify himself with the defense work so that his managers and supervisors give it first consideration. He pointed out the necessity for making a survey of the gas company property in order to secure facts for a well rounded defense plan. Concerning the building of morale, he said, "We must instill in ourselves, our workers in the streets, the plants and the offices the idea and belief—"We're tough — we're good — we're gas men. Gas service will be maintained—come what may!"

At one of the general sessions a number of the gas executives pointed their remarks specifically at the convention theme. H. R. Cloud, Florida Public Service Co., Orlando, Fla., spoke on maintaining service; F. C. Smith, Houston (Texas) Natural Gas Co., on sales; Eugene D. Milener, A. G. A., on association activities; D. C. Schnabel, Bozell & Jacobs, Inc., Houston, Texas, on advertising; Miss Emma Wood, Louisiana Public Utilities Co., Lafayette, La., on home service; John B. Reeves, district manager of Priorities, Atlanta, on priorities; Harold Vagtborg, Institute of Gas Technology, on research, and Charles B. Gamble, Birmingham (Ala.) Gas Co., on civilian defense.

At another general session, W. J. Amoss, New Orleans (La.) Public Service, Inc., presented an educational sound film which his company uses in personnel training work. Carl Sorby, Geo. D. Roper Corp., Rockford, Ill., gave a demonstration entitled, "Know 'em, See 'em and Sell 'em," dealing with the display and sale of counter appliances.

In the Residential Gas Sales Conference, presided over by J. H. Warden, Oklahoma Natural Gas Co., Tulsa, Okla., Davis M. DeBard, Stone & Webster Service Corp., New York, N. Y., presented results of a survey which he conducted revealing the continuing and expanding sales efforts of the industry. From the survey he told what numbers of the companies are doing about maintaining sales personnel, maintaining advertising and promotion, maintaining dealer sales, etc.

George Jones, Servel, Inc., Evansville, Ind., presented the general outlook faced by the refrigeration industry and urged the gas men to continue their sales force and every effort to see that refrigerators presently held reach proper destination in kitchens of homes that have gas meters. In relating how Servel is continuing its advertising program he pointed out the need for gas companies to continue to tell customers the advantages of gas refrigeration by all regular channels of selling and advertising. The Hot Water and Health side of the program was presented in a paper prepared by G. M. Rohde, Jr., of Ruud Mfg. Co., Pittsburgh, Pa.



Southern Gas Association delegates (left to right): L. L. Baxter, Association secretary-treasurer; Frank C. Smith, first vice president; Carl Wolf, out-going president; L. B. Denning, Jr., in-coming president of the association; Harold Vagtborg, Institute of Gas Technology; Davis M. DeBard, Stone & Webster Service Corp.; A. S. Johnson, Southern Union Gas Co.; George F. B. Owens, Brooklyn Union Gas Co.

doesn't anybody remember William Dawes?

ON THE 18th of April, in Seventy-five, *two* men waited impatiently for the signal in Old North Church. And when the signal was finally flashed, *two* men sprang to their saddles and clattered away towards Concord to spread the alarm.

One, of course, was Paul Revere. But few people know that he had a companion. And even fewer know his companion's name. It was Dawes . . . Major William Dawes.

Perhaps it seems strange that Paul Revere should get all the credit, when Dawes rode just as far and just as hard that night.

But . . . is it so strange? Not when you realize that Longfellow wrote a poem called "The Midnight Ride of Paul Revere". . . a poem every schoolboy reads. Not once is Dawes mentioned in this poem!

William Dawes is forgotten now. Nobody bothered to remind people about *his* famous ride!

And human memory can be just as fickle with *products* as it is with names . . . when nobody bothers to remind people.

Especially today, with business in its present abnormal state, it's easy to lose sight of this fact . . . easy to succumb to the temptation to let down for a time on advertising effort.

Nobody knows how long this emergency will last. But sooner or later, normal conditions *must* return. And when they do, you will want your customers to *remember* Gas and Gas Refrigeration . . . and still be *"sold"* on the silence and long life of the only refrigerator with no moving parts.

Forward-looking gas executives everywhere are taking stock of this situation. They're continuing to remind people during the coming months of their products and services through local advertising.

In 1942 also, Servel, Inc., is carrying forward *its* program—in the pages of influential national magazines—to keep Gas and Gas Refrigeration to the forefront of the public mind.

SERVEL
ELECTROLUX
GAS
REFRIGERATOR

WINS GOOD WILL FOR GAS AND GAS SERVICE

Among those present at the Southern meeting last month (left to right): John E. Bogan, A.G.A.E.M.; A. B. Parker, A.G.A.E.M.; J. H. Warden, Oklahoma Natural Gas Corp.; George S. Hawley, president, American Gas Association; Sam E. Linton, Nashville Gas & Heating Co.; H. N. Oldham, New Mexico Eastern Gas Co.; W. F. Wright, Dallas Gas Co.; Carl L. Trevitt, Community Natural Gas Co.

In the industrial meeting chairmanned by H. G. D'Spain, Mississippi Public Service Co., Amory, Miss., W. T. Ivey, Southern Natural Gas Co., Birmingham, Ala., discussed methods for putting existing facilities to work under improved load factors in order to increase the gas service available to war industries and employees of these industries.

T. M. Salsberry, Ebasco Sales Service, Inc., New York, N. Y., pointed out how commercial and industrial salesmen can contribute in reselling the values of the free and creative system of American Business. Frank Kelly read a paper prepared by R. M. Scoggins, Arkansas-Louisiana Gas Co., Shreveport, La., on Control Equipment for Industrial Gas, and Harry Draper of J. C. Pitman Co., Lynn, Mass., spoke on the Trend to Gas for Commercial Cooking.

H. N. Oldham, New Mexico Eastern Gas Co., Carlsbad, N. M., serving for the second year as chairman of the Technical Gas Sales Conference, presented as the theme of this meeting, "How It Is Done in Our Company and Why." Subjects discussed were "Reconditioning Pipe and Equipment During a National Emergency" by A. J. Goss, Chattanooga (Tenn.) Gas Co.; "New and Old Construction Methods We Use in Installing Mains and Services," by C. H. Palm, New Orleans (La.) Public Service Co.; "Possible Uses of Radio Control of Gas Department Operations" by J. P. Neill, Southern Natural Gas Co., Birmingham, Ala.; "How We Locate Leaks and Make Necessary Repairs," by W. P. Woods, Florida Public Utilities Co., West Palm Beach, Fla.; "How We Control Pressure in Our Distribution System," by Glenn Jones, Mississippi Power & Light Co., Jackson, Miss.; G. W. Adams, Macon Natural Gas, Macon, Ga., O. F. Reynolds, Chattanooga (Tenn.) Gas Co., and W. F. Wright, Dallas (Texas) Gas Co.; "How We Condition Gas," by C. L. Brockschmidt, Mississippi River Fuel Corp., St. Louis, Mo., Ray Bush, Georgia Natural Gas, Calhoun, Ga., and C. J. Smith, South Carolina Power Co., Charleston, S. C.; "Our Meter Shop Ideas and Practices," by M. J. Jackson, Arkansas-Louisiana Gas Co., Shreveport, La., and A. G. Guell, New Orleans (La.) Public Service, Inc.; "How We Use Cathodic Protection on Transmission and Distribution Systems," by R. H. Burdick, Southern Natural Gas Co., Birmingham, Ala., and M. L. Jacobs, Jacobs Wind Electric Co., Minneapolis, Minn.

One of the outgrowths of the meeting was the creating of a committee by the Southern Gas Association, the Mid-Southeastern Gas Association and the Florida and South Georgia Gas Meters' Association of a committee for coordinating the cooperation of the gas industry with war activities.

Numerous gas men took advantage of the kindly offer made by Carl Wolf to visit the offices and plant of the Atlanta Gas Light Co. Manufacturers attending the convention participated in providing a Friendship room for the benefit of all delegates. This was the much used general meeting place, following meetings, of all who wished to relax following business sessions.

CALENDAR

March

American Gas Association Industrial and Commercial Gas Sales Conference—Hotel William Penn, Pittsburgh, Pa., March 12-13.

Wisconsin Utilities Association, Commercial and Technical Divisions, Gas Section, Annual Meeting — Schroeder Hotel, Milwaukee, Wis., March 16-17.

New England Gas Association, 16th Annual Business Conference — Hotel Statler, Boston, Mass., March 19-20.

Mid-West Gas Sales Council Round Table Forum—Chicago, Ill., March 20.

Oklahoma Utilities Association—Biltmore Hotel, Oklahoma City, Okla., March 23-24.

April

Mid-West Gas Association Annual Meeting—Sioux City, Iowa, April 13.

Maryland Utilities Association Spring Meeting—Lord Baltimore Hotel, Baltimore, Md., April 17.

Gas Meters Association of Florida-Georgia—Savannah, Ga., April 19-21.

Southwestern Gas Measurement Short Course—University of Oklahoma, Norman, Okla., April 21-23.

May

Annual American Gas Association Natural Gas Section Convention — Roosevelt Hotel, New Orleans, La., May 4-7.

American Gas Association Distribution Conference — New Orleans, La., May 5-7.

Indiana Gas Association Annual Meeting—Indianapolis, Ind., May 11-12.

Natural Gasoline Association of America—Mayo Hotel, Tulsa, Okla., May 13-15.

Pacific Coast Gas Association Technical Section Meeting—Ambassador Hotel, Los Angeles, Calif., May 21-22.

American Gas Association Production and Chemical Conference — New York, N. Y., May 25-27.

June

Canadian Gas Association, 35th Annual Meeting—Windsor Hotel, Montreal, Canada, June 4-5.

Pacific Coast Gas Association Sales and Advertising Section Meeting—Ambassador Hotel, Los Angeles, Calif., June 11-12.

Pacific Coast Gas Association Accounting Section Meeting—Ambassador Hotel, Los Angeles, Calif., June 11-12.

American Society for Testing Materials — Chalfonte-Haddon Hall, Atlantic City, N. J., June 22-26.

September

Pacific Coast Gas Association Annual Convention — San Francisco, Calif., September 28.

24th Annual Convention, American Gas Association — San Francisco, Calif., September 29-October 1.

November

Mid-Southwestern Gas Association Meeting—Dates not definite.

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Mid-West Gas Association Shortens April Meeting

The officers and executive council of the Mid-West Gas Association have voted to cancel the annual convention of the association which was scheduled to be held in Sioux City, Iowa, April 13-15, and in its place will hold the annual meeting of the association, as provided for in the constitution, at Sioux City, Monday, April 13, 1942.

Action to cancel the convention was taken as a result of conditions which have arisen since the U. S. entered the war. The Spring convention for many years has been devoted almost entirely to sales problems, with papers and discussions relating to operating problems being reserved for the Gas School and Conference held at Ames, Iowa, in the fall.

The annual meeting will be planned to take care of necessary business of the association. This will include reports by the treasurer and auditing committee, action on membership applications and report of the Nominating Committee, and election of officers. In addition, one general discussion group to cover sales and various branches of operating will be held.

OUR CUSTOMERS WROTE THIS "AD"

(J42-3) Gas Jumbo Display, $4.90 each.

(GB42-3) Gas Background Displays, $4.95 per set.

Above gas displays, produced in cooperation with Association of Gas Appliance and Equipment Manufacturers, tell the story of modern gas cooking as it should be told today.

Bishop Utility Displays adequately solve at low cost store and window display problems for many New England Power System companies.
M. A. REICHHELD, Adv. Manager
New England Power Service Co., Boston, Mass.

We become more sold on Bishop service each year. I think that every gas company would want to subscribe for this worth-while service.
S. M. APPERSON, Sales Mgr.
Texas Public Service Co., Austin, Texas.

Bishop displays, with their originality and freshness, good lay-out and hard-hitting copy, are unique in their field. They are useful and effective in all our offices.
A. F. STADLER, Adv. Manager
Lake Superior District Power Co., Ashland, Wis.

Bishop Gas Displays are always timely and carry a vigorous story.
G. H. Porter, Floor Supervisor
Bridgeport Gas Light Co., Bridgeport, Conn.

We have used Bishop Gas Displays for quite some time and find them very effective.
PAUL R. GREENAWAY, Gas Sales Pro. and Adv.
Florida Power & Light Co., Miami, Fla.

Sure, we keep using Bishop displays—there's nothing to take their place.
C. W. CHILES, Advertising Manager
Central Illinois Public Service Co., Springfield, Ill.

Bishop Utility Displays have been a great help to us.
M. H. NORTH, Supv. Adv. & Sales Pro.
Blackstone Valley Gas & Electric Co., Pawtucket, R. I.

Your display service seems to improve each year and certainly is timely. We use it because it is better than we can produce and is not any more expensive.
C. W. TENNANT, General Sales Manager
Western United Gas & Electric Co., Aurora, Ill.

We hesitate to discard Bishop displays even after they have served their time.
J. C. JARVIS, District Manager
Public Service Co. of Ind., Inc., Princeton, Ind.

A versatile advertising service which we find indispensable.
H. E. TIMMINS, New Business Mgr.
Canadian Western Natural Gas, Light, Heat & Power Co., Ltd., Calgary, Alta, Canada

Bishop Displays are the backbone of our store display.
HENRY W. LAWSON, Adv. Mgr.
Springfield Gas Light Co., Springfield, Mass.

We have used Bishop Display Service for a number of years and have found it very satisfactory.
ROBERT TAYLOR, Manager
Montana-Dakota Utilities Co., Miles City, Mont.

Bishop Utility Displays are effective in drawing attention to utility services and are available at costs far below those for similarly effective material produced by ourselves.
J. M. STEDMAN, Mgr. Res. Sales
Pennsylvania Power & Light Co., Allentown, Pa.

After many years of continued use of Bishop Displays we know of no other similar service that approaches their standard for quality and timeliness.
R. R. KIRKEY, Sales Manager
Central Illinois Electric & Gas Co., Freeport, Ill.

Despite our very versatile display department we find vast need for and great value in Bishop's various venerable versions of Gas Display cards. They add verve and vim to window displays.
S. H. ALEXANDER, General Display Rep.
Public Service Electric & Gas Co., Newark, N. J.

The ideas in Bishop Displays are all new and fresh, delivering the punch that is needed to properly present our service to the public.
H. D. MAKEEVER, Sales Supv.
Illinois-Iowa Power Co., Mason City, Iowa.

AS "MR. GALLAGHER" SAID TO "MR. SHEAN," MAYBE WE'RE MISSING SOMETHING—So, order above displays today or write for full particulars on this time-saving and easy-to-use Display Service which is now being used monthly by hundreds of gas companies.

BISHOP PUBLISHING COMPANY • 155 East Superior Street • CHICAGO, ILLINOIS

Natural Gas Convention is May 4-7

THE Spring Executive Conference, the 37th Annual Natural Gas Convention and the 19th Annual Distribution Conference of the American Gas Association will meet in New Orleans La., May 4-7. At this meeting the entire gas industry will be ably represented and a series of meetings which will have much to do with the present and future activities of the natural and manufactured gas industries will be held. Probably the largest group of gas executives and employees which will assemble during the war period will confer at this meeting.

In spite of their already heavy duties, executives and operating men of the industry are spending thought and time on these meetings in order to arrange programs which will be helpful in plotting a course through the present maze of uncertainties.

The following executives are at work now in the preparation of an outstanding 1942 meeting:

J. French Robinson, chairman, Natural Gas Section, American Gas Association, and president, The East Ohio Gas Co., Cleveland, Ohio; H. Carl Wolf, chairman, Spring Executive Conference, president, Atlanta Gas Light Co., Atlanta, Ga.; B. R. Bay, chairman, General Program Committee, Northern Natural Gas Co., Omaha, Neb.; C. S. Goldsmith, chairman, Distribution Committee, Technical Section and Engineer of Distribution, The Brooklyn Union Gas Co., Brooklyn, N. Y.; C. U. Daniels, chairman, Natural Gas Production Committee and vice president, Oklahoma Natural Gas Co., Tulsa, Okla.; B. M. Laulhere, chairman, Natural Gas Transmission Committee and technical supervisor, Southern California Gas Co., Los Angeles, Calif.; D. W. Reeves, chairman, Industrial and Commercial Natural Gas Sales Committee and industrial sales manager, Oklahoma Natural Gas Co., Tulsa, Okla.; C. B. Wilson, chairman, Residential Natural Gas Sales Committee and new business manager, Arkansas-Louisiana Gas Co., Little Rock, Ark.

There will be a joint session of the Natural Gas Convention and Distribution Conference on Tuesday morning, May 5, in the Roosevelt Hotel at which time both the chairman of the Distribution Committee, C. S. Goldsmith, and the chairman of the Natural Gas Section, J. French Robinson, will speak.

"Marketing Problems Under War Conditions" will be the subject of H. V. Coes, Marketing Division of Ford, Bacon & Davis, Inc., New York, N. Y., at the second General Session on Wednesday, May 6. It is planned to include at these sessions speakers who can speak authoritatively on the relation of the natural gas industry to present and future trends in the banking and economic fields.

Programs of the Production and Transmission Conferences have been planned with the thought in mind that technical and operating problems of the natural gas industry are still with us in war or in peace and the experiences of authorities in the solution of these various problems will form a basic part of these meetings. On the Transmission Conference, for instance, Cathodic Protection, Main Line Automatic Shut-Off Valves and a movie on a New Acetylene Welding Process will be topics of primary interest.

The two sessions of the Production Conference will each be in the form of a symposium, the first on "Drilling and Completion in High Pressure Areas"; the second, on "Proper Production Methods." Each paper will be concise and timed to allow full discussion. It is planned to have represented on these programs men from producing areas in Oklahoma, Louisiana, Ohio, Texas, Pennsylvania and California.

The Industrial and Commercial Gas Sessions have a place of unusual importance in the 1942 program because gas is playing a four-star role in the American industrial picture today. Subjects for discussion indicate that men in the industrial gas field are fully aware of the facts which will affect that field in the coming months and of the contribution which the industry must make to our gigantic war effort. Subjects include:

The Engineer's Place in the War Effort.
Natural Gas as a Vital Factor in Production of War Materials.
Forum on Maintenance of Industrial and Commercial Equipment Under War-Time Conditions.
Gas Boiler Trends in War Establishments.
A Discussion of Industrial Gas Controls Being Installed in War Plants.
Problems in Providing Gas Service to War Establishments.
A Day With Natural Gas in an Army Camp.

At the meeting of the Residential Gas Sales Conference, C. B. Wilson will act as questioner in a panel discussion on "Today's Sales Developments." Six or seven natural gas executives, representing many sections of the country, will reply to Mr. Wilson's questions.

The same conference will be addressed by W. E. Derwent, president, Association of Gas Appliance and Equipment Manufacturers, who will speak on "The Outlook for Gas Appliances." "Maintaining Customer Satisfaction During the Emergency" is another vital topic which will be of interest to those attending these conferences.

The Home Service program, a perennial favorite at all Natural Gas Conventions, will this year take its place in the spotlight as a most important factor in the war effort. It will stress the tie-in with the National Nutrition program.

Because of the serious nature of the meetings this year and the need to concentrate on the problems of the hours, planned social functtions have been reduced considerably for the meeting.

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Pennsylvania Natural Gas Men Elect Officers for 1942

AT a recent meeting of the Pennsylvania Natural Gas Men's Association, officers and directors were elected for 1942. C. E. Bennett, president, Manufacturers Light & Heat Co., Pittsburgh, was elected president of the association; F. M. Sloan, Murrysville, was elected vice president; B. H. Smyers, Jr., Pittsburgh, was elected secretary-treasurer; and Mark Shields, Pittsburgh, will continue as executive secretary.

Newly-elected directors are: Mr. Bennett, E. M. Borger, president, the Peoples Natural Gas Co., Pittsburgh; H. D. Freeland, president, Union National Bank, Waynesburgh; T. B. Gregory, president, Union Heat & Light Co., Pittsburgh; D. P. Hartson, vice president, Equitable Gas Co., Pittsburgh; D. S. Keenan, president, Carnegie Natural Gas Co., Pittsburgh; B. D. Phillips, vice president, T. W. Phillips Gas & Oil Co., Butler; S. C. Preston, vice president, The Peoples Natural Gas Co., Pittsburgh; F. F. Schauer, president, Equitable Gas Co., Pittsburgh; George E. Welker, president, United Natural Gas Co., Oil City; and George Wittmer, Jr., president, Wittmer Oil & Gas Corp., Pittsburgh.

At the February meeting of the association, held in Pittsburgh February 23, John S. Turner, secretary of the Building Industry Council of Western Pennsylvania, was secured by L. E. Ostrye, chairman, program committee, to address the group on "The Builder's Problems in the War Program."

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Speakers' Program Set for Oklahoma Utilities Meeting

Gas and electric utility executives will be among the prominent speakers who have been engaged to address the annual convention of the Oklahoma Utilities Association, to be held at the Biltmore Hotel, Oklahoma City, Okla., March 23-24.

According to information received by Miss Kate A. Niblack, secretary of the association, from J. C. Happenny, chairman of the convention committee, these speakers include: W. Lee Woodward, president of the association and president, Zenith Gas System, Inc., Woodward, Okla., who will deliver the "President's Address," and Charles T. Evans, Arkansas Power and Light Co., Pine Bluff, Ark., who will deliver the address at the annual convention dinner, Monday evening, March 23.

Among subjects to be presented by other speakers are: "Public Utilities on the Battle Front of Democracy," by E. H. Poe, New York, N. Y., secretary, Natural Gas Section, American Gas Association, formerly of Tulsa, Okla.; "The State of the Union," D. I. Johnston, attorney; "Oklahoma Horizon," E. J. O'Connor, executive vice president, Associated Industries of Oklahoma, and "As Others See Us," Elmer T. Peterson, Oklahoma Publishing Co., all of Oklahoma City.

Preview of coming campaigns by

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MAR. 1942

With the war keeping us all closer to home, things like good lighting and a modern piece of equipment on which to cook the family meals are suddenly vitally important.

Appreciating this fact, P. G. and E. has written its advertising for March around lamps and kitchen ranges. The gas range story will be approached from the standpoint of saving fuel and heat, cutting down on the time necessary to prepare a meal, and conserving vitamins and other nutritional values for economy and better health.

The lamp and lighting ad will stress the cheery, inviting, morale-building effect of light which is at the same time abundant and well-shaded and diffused, and will offer free our new booklet on "blackouts."

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DEALERS: By watching this page from month to month you can keep informed of sales promotional campaigns to be sponsored by the Pacific Gas and Electric Company and the Gas Appliance Society. Detailed information will be supplied, as usual, through the mail. If such information is not received, call our local office or write Gas Appliance Society, 1355 Market Street, San Francisco, California

Wisconsin Gas Section Convention

THE Wisconsin Utilities Association Gas Section Convention will be held at the Schroeder Hotel, Milwaukee, Wis., March 16-17. On Monday morning following the comments of co-chairman O. W. Barenscher (technical division), and C. A. Debell (commercial division), L. F. Seybold, president of the association, will deliver an address to members at the Combination Session.

Mr. Seybold's talk will be followed by an address by George S. Hawley, president, American Gas Association, after which George Szekely, Dresser Manufacturing Co., Bradford, Pa., will speak on "Emergency and Permanent Repair of Damages to Gas Mains Caused by Sabotage or Bombs."

The Monday afternoon program of the association has been announced as follows:

Address: R. W. Peterson, chairman, Public Service Commission of Wisconsin.

"Viewpoint of Manufacturers on Ability to Supply Equipment and Appliances," Watson E. Derwent, president, Association of Gas Appliance & Equipment Manufacturers.

"Advantages of Natural Gas for Companies and Public," Dean W. Flowers, general manager, Michigan Consolidated Gas Co., Muskegon, Mich.

Panel Discussion on Priorities, led by O. C. Roehl, Wisconsin Public Service Corp., Green Bay, Wis.

Buffet Supper and Floor Show (7 p. m.)

The Tuesday morning Technical Session program is as follows:

"Minimization of Tar Emulsion Problems," George Dormer, Wisconsin Power & Light Co., Beloit, Wis.

"Propane Gas for Peak Load Coal Gas Requirements," G. G. Ellerbrock, Wisconsin Public Service Corp., Oshkosh, Wis.

"Distribution Problems With Dry Gases," Prof. O. L. Kowalke, University of Wisconsin.

"Engineering Aspects of Changeover to Natural Gas," L. J. Willien, Public Utilities Engineering & Service Corp., Chicago, Ill.

"The Effect of Changeover to Natural Gas on Meters," E. C. Hemes, Milwaukee Gas Light Co.

Tuesday afternoon Round Table Sessions for the Technical Session will be under the direction of the following chairmen:

Deane True, chairman, Meter and Pressure Regulator Committee.

George Helf, chairman, Customer Service Committee.

John Dopp, chairman, Committee on Gas Manufacture.

E. Campbell, chairman, Distribution Committee.

The Tuesday morning Commercial Session program is as follows:

"Procedure Recommended to Develop a Sales Engineering Organization Rapidly to Build Commercial, Industrial, and House-heating Loads," C. V. Sorenson, Northern Indiana Public Service Co., Hammond, Ind.

"Sales Promotion and Advertising Policies for the Duration of the Emergency," W. J. Grover, director of marketing, Surface Combustion Division, General Properties Co., Toledo, Ohio.

"Meeting the New Competition," John E. Bogan, sales promotion manager, domestic gas range division, Association of Gas Appliance & Equipment Manufacturers, New York, N. Y.

Tuesday afternoon Round Table Sessions for the Commercial Session will be under the direction of discussion leaders.

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C. N. G. A. Holds Dinner Meeting in Los Angeles

The California Natural Gasoline Association met on the evening of February 5 for a dinner and meeting in Los Angeles. Wm. Moeller, Jr., chairman, District 5, Natural Gas and Gasoline Committee, gave a talk on matters relating to the function of this committee. William W. Porter, II, consulting geologist, delivered a paper on "Relation of Geology to Current Problems." Three short sound movies, released by the Office of Emergency Management, were shown at the meeting.

Every need of pressure-control in the handling of gas, oil, air, steam, water — for whatever use, by the utility company, the industrial plant, or the domestic consumer — has been provided for in the complete line of C-F Regulators. Weight-and-lever types, spring-loaded types, and pilot-operated types are specifically adapted for the accurate and reliable control of either high or low pressures, under varying conditions. Write for complete catalog.

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A. G. A. Combined Conference

IN ORDER to effectively unify the part of gas in war production, the two annual sales conferences of the American Gas Association's Industrial and Commercial Gas Section have been combined into one meeting this year: the A. G. A. Industrial and Commercial Conference, which will meet March 12-13, at the Hotel William Penn, Pittsburgh, Pa.

The advance program has been announced as follows:

Thursday, March 12

8:30 a. m.—Registration.

9:30 a. m.—General Session.

(Presiding: George F. B. Owens, chairman, Industrial and Commercial Gas Section and assistant vice president, The Brooklyn (N. Y.) Union Gas Co.)

Industrial and Commercial Gas Engineers—Their Vital Role in the War Effort—Edward M. Borger, president, The Peoples Natural Gas Co., Pittsburgh, Pa.

Meeting the Problems of a Rapidly Expanding War Production—Henry M. Heyn, Surface Combustion Division of General Properties, Inc., Toledo, Ohio.

War-Time Relations With Our Industrial and Commercial Customers—J. P. Leinroth, Public Service Electric & Gas Co., Newark, N. J.

Fuel Problems Confronting the War Production Program — Major L. A. McQuown, Utilities Division, District Ordnance Office, Pittsburgh, Pa.

2:00 p. m.—Industrial Gas Session.

(Presiding: George F. B. Owens, chairman, Industrial and Commercial Gas Section.)

How Industrial Gas is Promoting Canada's War Effort—D. H. Thorburn, manager, industrial gas department, United Gas & Fuel Co. of Hamilton (Ontario) Ltd.

Important Industrial Gas Equipment Developments and Their Application to War Production—Lee Wilson, president, Lee Wilson Engineering Co., Cleveland, Ohio.

A Discussion of Industrial Space Heating, (sponsored by Industrial Space Heating Committee) — James E. Dare, chairman, Public Service Co. of Northern Illinois, Streator, Ill.

What Is Our Most Acute Industrial Gas Business Problem?—(Short talks by industrial gas managers—F. T. Brooks, Philadelphia (Pa.) Electric Co.; Frank S. Kelly, Jr., Arkansas-Louisiana Gas Co., Shreveport, La.; W. D. Thompson, The Laclede Gas Light Co., St. Louis, Mo.

2:00 p. m.—Commercial Gas Section.

(Presiding: Ben H. Gardner, vice chairman, Industrial and Commercial Gas Section, and vice president, Columbia Engineering Corp., Columbus, Ohio.)

Gas Food Service Equipment—Sales and Service Under Present Conditions—F. Russell Howe, Rochester (N. Y.) Gas & Electric Corp.

What Is Our Most Acute Commercial Problem?—(Short talks by commercial gas managers)—J. R. Delaney, The Cincinnati (Ohio) Gas & Electric Co.; and Harry M. Woolman, Jr., Jersey Central Power & Light Co., Asbury Park, N. J., and others.

Deep Fat Frying Program—John L. Hall, Southern California Gas Co., Los Angeles, Calif.; Raymond Little, Equitable Gas Co., Pittsburgh, Pa.; Samuel E. Tappan, J. C. Pitman & Sons, Inc., Lynn, Mass., and Ray Trowbridge, Seattle (Wash.) Gas Co.

Friday, March 13

9:30 a. m.—General Session.

7:00 p. m.—The Conference Dinner.

(Presiding: Ben H. Gardner)

Immersion Tubes for Industrial and Commercial Heating—F. E. Vandaveer, assistant director, A.G.A. Testing Laboratories, Cleveland, Ohio, and O. M. Olsen, Sellers Engineering Co., Chicago, Ill.

Drying Processes With Gas Heat—Don D. Beach, Atlanta (Ga.) Gas Light Co.

Commercial Gas Equipment in Military Establishments—John W. McNair, vice president and general manager, Standard Gas Equipment Corp., Baltimore, Md.

What About Industrial and Commercial Water Heating in Defense?—G. M. Rohde, Jr., Ruud Mfg. Co., Pittsburgh, Pa.

2:00 p. m.—Industrial Gas Session.

(Presiding: Carroll B. Mershon, The Manufacturers Light & Heat Co., Pittsburgh, Pa.)

Gas in the All-Out Industrial Effort — W. Trinks, Carnegie Institute of Technology, Pittsburgh, Pa.

Metal Treating and Melting Forum—(Sponsored by Metal Treating and Metal Committee)—Robert C. LeMay, chairman, The Connecticut Light & Power Co., Waterbury, Conn.

Forum on New and Improved Industrial Heating Processes and Equipment — Lawrence E. Biemiller, Consolidated Gas Electric Light & Power Co., Baltimore, Md., discussion leader.

2:00 p. m.—Commercial Gas Session.

(Presiding: George F. B. Owens, chairman, Industrial and Commercial Gas Section.)

Design and Engineering Developments in Hotel and Restaurant Equipment—Edwin A. Jones, Majestic Mfg. Co., St. Louis, Mo.

Stretching the Life of the Commercial Appliances on Our Lines—(Speaker to be announced).

Food Service Equipment Forum — (Sponsored by Food Service Equipment Committee)—Harry M. Woolman, Jr., chairman, Jersey Central Power & Light Co., Asbury Park, N. J. Subjects: Heavy Duty Cooking Equipment; Bake Ovens; Specialized Appliances; and Food Service in War Factories.

Committee Meetings

Thursday, March 12

10:00 a. m.

Technical Advisory Committee for Gas Summer Air Conditioning Research—G. E. May, chairman.

Saturday, March 14

8:00 a. m.—Breakfast Meeting

Volume Water Heating Committee—Gebhard C. Beck, chairman.

Industrial Space Heating Committee—James E. Dare, chairman.

9:45 a. m.

Spring Meeting, Managing and Advisory Committee, Industrial and Commercial Gas Section of the American Gas Association.

N. E. G. A. Annual Business Meeting

"WAR and Post-War Operations" is the theme of The New England Gas Association's 16th Annual Business Conference which will be held at the Hotel Statler, Boston, Mass., March 19-20.

The conference program has been announced as follows:

Thursday, March 19, 10 a. m.

"The Association's Year" — Clark Belden, executive secretary, The New England Gas Association.

"The Gas Appliance Manufacturers"—Watson E. Derwent, president, Association of Gas Appliances and Equipment Manufacturers and vice president, Geo. D. Roper Corp., Rockford, Ill.

Address of the President — Charles G. Young, president, The New England Gas Association, and manager, Springfield (Mass.) Gas Light Co.

"National and Industrial Survival"—Erwin H. Schell, Head of the Department of Business and Engineering Administration, Massachusetts Institute of Technology.

Thursday, March 19, 2 p. m.

"The Institute of Gas Technology"—Harold Vagtborg, director, Institute of Gas Technology, Chicago, Ill.

"New Problems for Your Accountants"—E. F. Embree, auditor, New Haven (Conn.) Gas Light Co.

"Civilian Defense—Why, What and When"—J. W. Farley, executive director, Massachusetts Committee on Public Safety.

"Current Purchasing Problems" — R. E. Shillady, purchasing agent, New England Power Service Co., Boston, Mass.

"Free or Paid Appliance Servicing"—James A. Cook, general manager, Lynn (Mass.) Gas & Electric Co.

Friday, March 20, 10 a. m.

"Public Relations Developments" — Clark Belden, executive secretary, The New England Gas Association, and chairman, Public Relations Committee, American Trade Association Executives, 1939-1941.

"Testing Applicants for Employment, Transfer or Promotion"—Herbert W. Saul, director, Guidance Dept., Boston, Mass., Y. M. C. A.

"Home Service Today"—Ruth Roule, director, Home Service, Brooklyn (N.Y.) Union Gas Co.

"The 1942 Home Appliance Market"—Arthur P. Hirose, director of market research and promotion. McCall Corp., New York, N.Y.

"Why the Gas Industry Needs Detailed Market Studies" — Henry O. Loebell, vice president, Combustion Utilities Corp.

"Keeping Pace With Industrial Developments" — C. B. Phillips, vice president in charge of sales, Surface Combustion Corp., Toledo, Ohio.

Friday, March 20, 2 p. m.

Remarks of the President—George S. Hawley, president, American Gas Association, and president, The Bridgeport (Conn.) Gas Light Co.

"The WPB Salvage and Scrap Speed-up Program"—George Sutherland, Utility Coordinator, Industrial Salvage Section, Bureau of Industrial Conservation, War Production Board.

"Afterwards—What Then?"—Malcolm P. McNair, chairman, Program Section, Massachusetts Committee on Post-War Adjustments and Prof. of Marketing, Harvard Graduate School of Business Administration.

"Progress in the Manufactured Gas Industry" — W. D. Gay, manager, utility department, Standard and Poor's Corp.

ABSTRACTS

• Abstracts of the papers presented at the meetings of the Southern Gas Association and the Southern-Southwestern Regional Gas Sales Conference at the Atlanta Biltmore Hotel, Atlanta, Ga., February 9-10, 1942.

Maintaining Service—H. R. Cloud, vice president, Florida Public Service Co., Orlando, Fla. The production and distribution of gas certainly for the next year and possibly for a much longer period must be done to a large degree with existing equipment. The manufacturers of gas machinery of all types and those manufacturing the turbines and motors which drive machinery are booked to capacity with orders, largely for war materials. Since these articles have a favorable priority it will be practically impossible to get new machinery soon. Under these circumstances there is very real need to utilize all devices known to the industry to "step up" production and efficiency of our present manufacturing and distribution equipment.

One company in the Southeast manufacturing carburetted water gas was asked to serve a large housing project and an army camp was faced with the shortage of productivity capacity during a few weeks in the year in which cold weather prevailed. In this instance the gas machinery manufacturers, after a survey, indicated the desirability of changing the generator linings from the standard fire-brick to a carborundum lining. Such a change was made on two gas sets, one being a 7 ft. set and the other a 9 ft. set. The results were better than the forecast, with an increase of 18.3% make per hour on the 7 ft. set to a maximum of 73,500 cu. ft. per hour on a test run. The 9 ft. set was even better, being increased 21.3% to a total of 143,400 cu. ft. per hour. The capital investment required was practically nothing if the increased life of the carborundum lining was properly evaluated.

Another device which was used was that of introducing propane or butane in a gaseous form into the gas system just ahead of the holder. This permitted a change in the method of manufacture so that a lower B.t.u. product from the generators was stepped up in B.t.u. by the introduction of the butane or propane. The over-all result of such a performance indicates that as much as 30% increase in capacity can be achieved by such a device.

How We Condition Our Gas — C. J. Smith, South Carolina Power Co., Charleston, S. C. Conditioning of carburetted water gas starts in the wash box which is the last piece of equipment in the water gas set. The gas then passes into the relief holder where it is further cooled to 175° by conduction of heat to the atmosphere. The gas leaving the relief holder enters the high duty condenser where it is cooled to 110° using salt water as a cooling medium. Additional tar, oil and considerable water vapor is removed from the gas in the condenser. The gas then passes through a tar extractor where the bulk of the remaining tar is removed. From the tar extractor it passes through a bubble washer where it is scrubbed with circulating wash box water to remove final traces of tar. The gas then passes through four circular purifying boxes where the hydrogen sulfide is removed, using iron oxide as a purifying medium. From the purifiers the gas passes through a napthalene scrubber where substantialy all of the napthalene is removed, but even when large amounts of fresh oil are used there is left in the gas enough gum formers to still cause serious service difficulties with regard to pilot light outages. Two years ago a gun filter was installed in the pilot line of every gas appliance, this being the only method found so far that will successfully overcome this difficulty, according to Mr. Smith.

New and Old Construction Methods We Use in Installing Mains and Services—C. H. Palm, New Orleans Public Service, Inc., New Orleans, La. A decided change in the methods of construction of services has taken place in the past year or two. Today we are using a precast concreted service in 10 ft. and 20 ft. lengths. This affords us the opportunity to jack our services underground. This procedure has proven successful in over 90% of the jobs. The type of jack used is the 10 ft. long rail jack propelled by hand. A hole is dug over the main locating same and a trench is excavated at or or near the property line in which jack is operated. Obstructions in street and sidewalk are located by feeling rod. Using three targets the grade of the jack is determined. The bore for 1½ in. service piping is made by jacking a 4 in. head made in different shapes connected to first length of 2 in. pipe. Lengths of 2 in. pipe approximately 7 ft. long are added one at a time in the jack. The joints in the bore are protected by cement, using a small sheet of tin wrapped around pipe as a form for pouring same.

How We Do It—Manufacturing Problems in the Development of Engine Cathodic Units—M. L. Jacobs, general manager, Jacobs Wind Electric Co., Minneapolis, Minn. There are three general methods of mechanically driving generators to produce electricity for cathodic protection: the engine, the electric motor, and the wind, and since the engine type presents more problems than either of the other two and has a much wider field of application, the discussion is confined to this type. The engine driven pipe line cathodic plant has three major requirements: continuous operation, wide range of volt and ampere output and ability to run for long periods between inspections. These requirements are dealt with in detail.

Our Meter Shop Ideas and Practices—A. G. Guell, betterment engineer, New Orleans Public Service, Inc., New Orleans, La. Meter shops are charged with the responsibility of preparing meters for service that are as near perfect in workmanship and proof accuracy as possible. To accomplish this the individual shops are continually experimenting to perfect their methods or develop new ideas and approaches to their problems of meter repair. The following practices are discussed: (1) Reoiling of gas meter diaphragms using a submersion method. (2) Types of packing and the effect of the degree of tightness on meter proof. (3) Four point test using a slope gauge. (4) Lowering the possible diaphragm test pressure.

Standby Equipment and Policies—W. T. Ivey, Southern Natural Gas Co., Birmingham, Ala. The following expedients, in the face of augmented loads and lack of opportunity for plant expansion, are discussed: high B.t.u. oil gas standby; interruptible contracts with large customers, in the nature of both temporary shut-down and auxiliary fuel. The standby policy may be looked upon not only as a temporary expedient to meet war-time emergency conditions, but also as a practical aid in load building, whereby new load can continually be added and evaluated before building capacity to serve it.

Meter Shop Practice—M. J. Jackson, Arkansas-Louisiana Gas Co., Shreveport, La. A detailed description of the policies and practices followed in a meter shop caring for a system containing 104,321 meters of all sizes, both tin and iron.

How We Regulate Our Distribution Pressure—G. C. Jones, Mississippi Power & Light Co., Jackson, Miss. A description of facilities and operating practices in a typical system using all types of regulations, whereby "bottlenecks" have been eleminated by engineering studies.

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• Abstracts of new books, pamphlets, and articles published in current issues of the business publications serving the gas and allied industries.

Gas Appliance Servicing—Prof. Osborne B. Tabor, Boston University College of Business Administration. Planned and edited by a committee of engineers and service executives of The New England Gas Association. Gives the fundamental principles underlying the operation, repair and adjustment of gas appliances, elements of mechanics governing the operation of burners, thermostats and controls, chemistry of gas production, and combustion and use. It is a basic text to aid in training and developing service men and offers a practical combination of experience and theory. The 250-page book was written in response to requests from members of The New England Gas Association and the editorial committee devoted two and a half years to the planning, preparation and editing of the volume. The text is written in non-technical language for both experienced service men and apprentices. The book contains 192 illustrations, diagrams and tables with concise explanations. A unique feature is a topical outline for the use of executives in giving service men instructions regarding company policies and procedures and the

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GAS in this department each month presents reviews of technical magazine articles, new books, and individual reports presented before the association meetings of the gas and allied industries.

To do this, a competent editorial staff each month reads more than 70 publications serving the gas, oil, and affiliated industries. In addition the technical editor of GAS combs the individual reports given before association meetings for worthy material to be presented in this department.

As an example of the value of this department, we cite an instance where one of our technical readers (with two subscriptions to GAS) cuts out these items, pastes them on 3 by 5 cards, and files them under subject headings for future reference.

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rules covering conduct in the field, customer contacts and conversations about company matters. Published by the Bureau of Business Research, Boston University College of Business Administration, 685 Commonwealth Ave., Boston, Mass. Single copies are $7.50; two to 20 copies, $6.00 and more than 20 copies, $5.00 each.

Bibliography of Articles and Reports on the Industrial and Commercial Uses of Gas—(Classified and Arranged by Magazines Alphabetically, Jan. 1, 1941, to Jan. 1, 1942)—C. George Segeler, engineer of utilization, American Gas Association, 420 Lexington Ave., New York, N. Y. Approximately 225 titles are included in the 1941 bibliography as representative of the more significant applications of industrial and commercial gas. The bibliography is based on publications which are easy to obtain. In the event that a specific item cannot be secured locally, the A. G. A. maintains a complete file, and photostatic copies of any articles may be obtained at a cost of 25¢ per page. Titles have been selected so as to bring together references which will be of real assistance to the industrial and commercial departments of gas companies. This bibliography is the eleventh issued by the A. G. A. on industrial and commercial uses. References may be made to Industrial Service Letter No. 32 issued about a year ago for the dates of issues and the numbers of previous bibliographies.

Test Results on the Use of Anthracite in Heavy-Oil Water-Gas Operation at the Pottsville Gas Works—L. L. Newman, C. C. Wright, and A. W. Gauger. This bulletin, No. 32, may be secured from The Pennsylvania State College, School of Mineral Industries, State College, Pa. Price: 50¢. Contains the results of test operations at the Pottsville Gas Works on a heavy-oil Water-gas set using anthracite as generator fuel are presented in detail together with pertinent information regarding methods of test and complete description of the equipment. Three anthracites of varying physical and chemical properties were tested, two of which were used both with and without reforming of heavy oil, and smooth operation with satisfactory coal and oil results were obtained. The production capacity of the set using anthracite as generator fuel was found to approach closely the standard rating for small generators.

Sixth Annual Safety Equipment Issue of National Safety News—Issued by National Safety Council, Inc., 20 No. Wacker Dr., Chicago, Ill., on or near March 1, 1942. More than 200 pages which give full illustrations and descriptions of all types of equipment to promote health and safety in industry. Classified and indexed to save time and needless correspondence. All regular subscribers to "National Safety News" will receive a copy, extra copies may be purchased.

Problems in Redrilling Deep Dominguez Wells Sheared by Earthquake—T. P. Sanders. *Oil and Gas Journal*, Jan. 8, 1942, p. 40. A recent earthquake in California caused extensive underground damage to 15 wells in the Dominguez field, making extensive repair work and redrilling necessary. Unfortunately, there is no feasible method for preventing a recurrence of the damage in case of another earthquake.

Transmitting Natural Gas 1155 Miles—*Compressed Air Magazine*, Jan., 1942, pp. 6627-6634. Describes the construction and operation of the natural gas transmission line from Amarillo, Texas, to Detroit, Mich.

The Inside Story on G-E CATHODE PROTECTION RECTIFIERS

G-E CONTACTOR closes power onto rectifier when the automatic switch functions, providing maximum safety.

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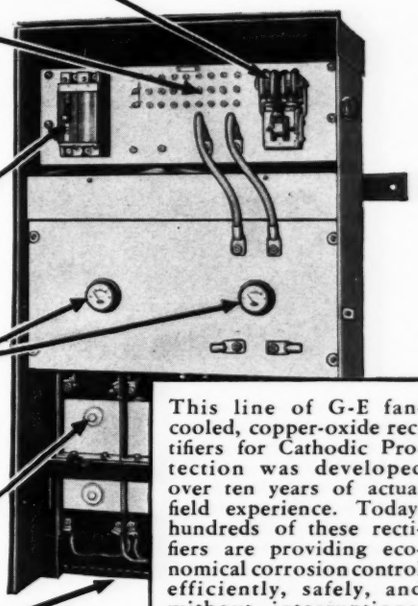
G-E CASING has double-wall construction . . . removable front panel . . . bottom location of air intake and exhaust . . . compactness.



This line of G-E fan-cooled, copper-oxide rectifiers for Cathodic Protection was developed over ten years of actual field experience. Today, hundreds of these rectifiers are providing economical corrosion control efficiently, safely, and without interruptions, even under the most adverse conditions.

AVAILABLE IN 22 RATINGS

GENERAL ELECTRIC

For more information, send this coupon or write today. Section A-2853, Appliance & Merchandise Dept., General Electric Company, Bridgeport, Conn.

Sirs: Please send more information on G-E Cathodic Protection Rectifiers.

Name.....

Address.....

City.....State.....

THEY DO THEIR WORK
QUIETLY AND EFFICIENTLY

Klixon Electric Gas Valves and Room Thermostats are snap acting—*disc operated*. Which means both efficient and quiet operation. The room thermostats are vibration-proof, non-radio-interfering and free from troublesome parts. And the gas valves can't hum, stick or chatter. Klixon Valves and Thermostats can be used on all types of gas heaters. Valves come in a wide range of sizes. Send for complete information.

KLIXON

SPENCER THERMOSTAT CO.

803 Forest Street Attleboro, Mass., U. S. A.

We the people...are UNITED
LIKE YOUR RELIABLE GAS Service WE'RE ALL WORKING ROUND THE CLOCK TO PRESERVE OUR American Freedom of Enterprise and Opportunity
"BABY SNOOKS" IS PLENTY BUSY HELPING WIN THE WAR
WE TOO, WHO FURNISH LOW-COST Gas Service ARE "PLENTY BUSY" BUT THIS COMPANY WAS BUILT TO BE BUSY
BUY DEFENSE BONDS AND STAMPS
VICTORY SIGN
Your EVER-ALERT GAS INDUSTRY IS WORKING AND FIGHTING TO PRESERVE OUR PRECIOUS FREEDOM
Buy Defense Bonds and Stamps

Timely examples of war-time advertising by gas industry.

Six Reasons for Advertising Now

By ROBERT and GLENN A. BISHOP
Bishop Publishing Company, Chicago, Illinois

IN ELMER WHEELER'S inspiring books, he advised salesmen to ask the question "Why?" when someone turns them down. The purpose is to change from the defensive to the offensive by putting the prospect on the defensive.

So it's up to us to prove ("Why") advertising should be continued in the face of a fast dwindling supply of gas appliances, priorities and restrictions. So, here goes:

First: Continuous advertising will convince your boys now in Uncle Sam's service that you also are on the alert, so that they will have a chance of getting their peace-time jobs back when our Victory is won. This comes first.

Second: Consistent advertising helps to preserve the "freedom of the press." One of the many reasons we are fighting the axis powers is because they suppress the press, and with their present vicious power they've become such "damn liars." Yes, the life blood of newspapers, magazines, radio and other forms of independent public information depends largely on advertising revenue.

Third: Advertising has done a big job in introducing, educating and finally selling the public on benefits, comforts, advantages, and economies, and it should not be neglected now. Our system of American creative enterprise under efficient business management makes advertising possible; likewise advertising has made mass production possible and it has played a big part in making America great. Anyone who stops or curtails advertising today either lacks imagination or is a defeatist. Disastrous experiences after the first World War should convince those in doubt.

Fourth: Business needs friends in abundance. After this war is over, businesses will arrive at that inevitable period of readjustment when those with a stout reserve of friendships will enjoy a more speedy rehabitation. The smart ones already know that friend ships cannot be won overnight, nor by spasmodic effort. They cannot be neglected and resumed at will, but by continuous effort. Businesses must nurture old friendships *now*—and cultivate new ones from *now on*, if they are to remain on top after we win this war.

Fifth: The great expansion of electric power and war industries will create greater competition for gas after victory. Meet it by advertising *now*.

But probably you're thinking . . . "Now we're fighting for our very lives, and we can't be talking about providing more leisure for women when wasting time, or food, or gas, has become a national sin." And you're right—but we don't need to stop advertising—it should be tuned up to harmonize with the times. In peace time, it is logical and proper to show peace time benefits, but in time of war, show we're loyally serving our country in this hour of need. Of course, you'll continue to show the many benefits of your products, but in a different way.

The British government and business men have continued a policy of "advertising-as-usual" despite the war, according to a survey by Lord & Thomas. In a report on the function of advertising in Great Britain under wartime conditions, the agency said that despite vast changes the familiar patterns of life have continued. Thus, advertising "mirrors" the nation's commercial enterprise, "protects the advertisers' investments in trade names, keeps contact with the changing habits of the public," helps to maintain a free press through independent revenue and "plays an important role in upholding the morale of the people."

It is likewise *your duty* to do *your share* of the job of informing the people of the part they can play in America's "all-out" fight for victory. The gas displays illustrated in this article are a timely example of how hundreds of gas companies are cooperating. The picture illustrating "We, the People" display was especially posed by us and many gas companies using those displays will use this picture and carry this idea on through in their advertising. Although the "Baby Snooks" civilian defense cartoon pictures and Kate Smith photo were especially arranged by us, naturally these latter ones are not available for gas company newspaper use.

Gas displays of this kind do at least three things:

1. Help sell the American system of business management.
2. Encourage all to participate more fully in our most dangerous war effort.
3. Help keep your offices from looking like empty stores, due to a shortage of merchandise.

New photos just recently posed by us for future gas displays will feature civilian defense activities, saving food, vitamins, nutrition, the necessity of sacrifices, etc.

Another timely theme in connection with vitamin gas cooking, worked out in cooperatin with the Association of Gas Appliance and Equipment Manufacturers, featurees CP gas cooking.

People now have confidence in the ability of gas companies to perform, so keep them informed and they'll be loyal to you when you're again able to furnish them all with modern gas appliances. "All this and more" is why you should advertise *now*. Besides, there is no priority on brains, no restrictions on new ideas.

NOW

"America First"

IS MORE THAN

A SLOGAN

ARMS AND MEN . . . Equipment . . . Supplies. These are the sinews of war, the need of the nation. Every factor of production is responding to America's call. ☆ It's "America First" everywhere. PAYNE is proud to play a part in our country's preparation. PAYNEHEAT—in thirty-one cantonments and bases—is adding to the comfort, and guarding the health, of our soldiers. PAYNE'S production facilities are engaged in manufacturing vital war materials. ☆ Thus, PAYNE'S "priorities" policy must be: First, government requirements; second, established PAYNE Dealers; third, (if and when possible) new dealers. ☆ The understanding and cooperation already shown by PAYNE Dealers is most gratifying. You can be assured that we will take care of your equipment and service needs as promptly as possible.

PAYNEHEAT

MORE THAN A QUARTER-CENTURY OF GAS SPECIALIZATION

Payne Furnace & Supply Co., Inc., Beverly Hills, California

JM Johns-Manville

TRANSITE FLUE PIPE

AN ASBESTOS PRODUCT

For venting gas-burning appliances

PEOPLE

Executive personnel of the recently-opened general office *(GAS,* Jan., 1942, pg. 28) of the Sioux Falls (S. D.) Gas division of the Central Electric and Telephone Co. has been announced as follows: **Max McGraw,** president; **R. A. Phillips,** vice president and general manager; **Judson Large,** secretary-treasurer; **K. L. Dally,** general commercial manager; **E. E. Baxter,** commercial engineer; **C. O. Field,** commercial engineer; **Louis Langhus,** chief electric and gas engineer; **F. H. Edminster,** purchasing agent; and **H. A. Hanson,** general auditor. District manager is **E. C. Deane** and district superintendent, **Leonard J. Loveseth.** District manager for the company at Columbus, Neb., is **H. R. Slocum** and superintendent, **H. M. Bartholomew.**. District manager at Jamestown, N. D., is **J. C. Crookham** and local manager, **E. T. Carstensen.**

• •

In the personnel of the Office of the Petroleum Coordinator, the men who will head the certain Natural Gas and Natural Gasoline Sections in districts 1, 3, and 5 are:

District 1: **Frank M. Brewster,** chief, 122 East 42nd Street, Chanin Bldg., New York City.

District 3: **D. E. Buchanan,** chief, 245 Mellie Eperson Bldg., Houston, Texas.

District 5: **Reed W. Garman,** assistant chief, 417 So. Hill St., 855 Subway Terminal Bldg., Los Angeles, Calif.

• •

John W. Batten has been appointed chairman of the Committee on Industrial Gas Research of the American Gas Association. Mr. Batten succeeds **F. J. Rutledge,** chairman of the committee since its organization and vice president, the United Gas Improvement Co., Philadelphia, Pa. Mr. Batten is vice president and general manager, at Detroit, for Michigan Consolidated Gas Co. A graduate of the University of Toronto, Mr. Batten is a member of the Executive Board of the American Gas Association and is a past president of the Michigan Gas Association. **Charles R. Bellamy,** Columbia Gas & Electric Corp., New York, N. Y.; **Charles C. Krausse,** Consolidated Gas Electric Light & Power Co. of Baltimore (Md.); **J. P. Leinroth,** Public Service Electric & Gas Co., Newark, N. J.; **R. D. Maxson,** Public Service Co. of Northern Illinois, Chicago, Ill.; **George F. B. Owens,** The Brooklyn (N.Y.) Union Gas Co.; **George M. Parker,** Mississippi River Fuel Corp., St. Louis, Mo.; **Eugene J. Stern,** Atlanta (Ga.) Gas Light Co., and **Elmer F. Schmidt,** Lone Star Gas Co., Dallas, Texas, will serve with Mr. Batten as members of the committee.

• •

R. B. Harper, former chairman of the Approval Requirements Committee of the American Gas Association, was recently honored at a meeting of that committee. Mr. Harper was the winner of the Beal Medal in 1931, highest technical award of the gas industry, and the Walton Clark Gold Medal in 1938 for distinguished work in the chemistry and physics of the gas industry. In 1915 he headed the first committee which proposed a national testing laboratory where nationally acceptable standards could be developed and applied in behalf of the gas industry and its consumers. He served on the American Gas Association's Testing Laboratories Managing Committee and Approval Requirements Commitee since 1925 and was appointed chairman of the Approval Requirements Committee in 1927. An engraved leather-bound booklet, bearing not only the signature of each member of the committee but also many other representatives of other organizations, was prepared and presented to Mr. Harper.

R. B. HARPER

• •

J. Woodward Martin, manager of the Lone Star Gas Co.'s stargas department, Dallas, Texas, has been appointed analyst for liquefied petroleum gases by **Harold L. Ickes,** head of the Department of the Interior.

In Washington, Mr. Martin will be attached to the Office of Petroleum Coordinator for National Defense and will work on problems arising from the need of liquefied petroleum gases for aviation gasoline and synthetic rubber for war needs and the effect such demands will have on the present household and industrial fuel needs for these gases.

Mr. Martin was recommended for the position at a meeting of 300 representatives of the liquefied petroleum gas industry in New Orleans recently. He was president of the Liquefied Petroleum Gas Association for 1939 and 1940.

• •

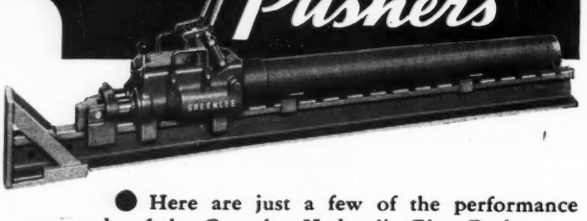
R. L. Bowen, president of the Community Public Service Co., Ft. Worth, Texas, has been appointed Operators Officer on the State Staff of the Civil Air Patrol and is helping to organize C. A. P. operations in the Fort Worth area. **R. K. Hanger,** Community Public Service Co. Board of Director's member, is an executive officer of the C. A. P. for the area.

• •

Robert E. Allen, who has been director of the production division of the Office of Petroleum Coordinator, has been elevated to assistant deputy petroleum coordinator. A graduate of the University of West Virginia, Mr. Allen has been in the petroleum business since 1916. For the past 13 years he has been occupied with conservation administra-

LAY PIPE *Twice* AS FAST with *Greenlee* *Hydraulic* *Pushers*

Here's Proof!



✓ 2½-inch pipe pushed 165 feet under Michigan Blvd., Chicago, in 9 hours. Pushed from 3rd sub-basement.

✓ 3-inch pipe pushed 130 feet in dry hard soil under concrete pavement in 11 hours.

✓ 23,800 feet of 1½" galvanized iron conduit installed for fire alarm raceway under concrete streets in less than ten weeks.

✓ Only 2 hours to push 3-inch pipe 60 feet in rocky filled-in soil under concrete highway.

These performance records taken from letters and information voluntarily sent in by users.

● Here are just a few of the performance records of the Greenlee Hydraulic Pipe Pusher . . . each one proof that the Greenlee Pusher is the fastest and most economical way to lay pipe. These pushes were all made with only one or two men pumping the handles. On each of these jobs the time saved over other methods was more than 50%. There's no extensive trenching, no pavement cutting, no tunneling, no backfilling, no repaving. Only a short trench is dug to accommodate the pusher and pipe. Easy to carry to the job and set up because they're compactly built into one unit . . . no extra equipment needed. Write today for information about the No. 790 Pusher for 1¼ to 4-inch pipe or the No. 795 for large drainage ducts and pipe beyond 4 inches.

Send For
PUSHER BULLETIN
S-117

Greenlee TOOL CO.
1943 COLUMBIA AVE. • ROCKFORD, ILL.

tion. In 1930 he served on the Petroleum Economics Committee, and in 1935 was a member of the Federal Government's Small Enterprises Committee.

Mr. Allen has been succeeded in his former post by **Donald R. Knowlton,** who is on leave of absence from Phillips Petroleum Co., where he is general superintendent in the production department. Mr. Knowlton joined Phillips as a petroleum engineer in 1926, his first job being at Borger, Texas. He rose to assistant to the chief engineer, and later to chief engineer..

• •

The appointments of **W. Everett McLaine** as director of public relations and **Edward C. Myers** as assistant director of public relations for United States Steel Subsidiaries in the Pittsburgh district were announced in Pittsburgh February 9. At the same time it was announced that **Walter E. Camp** will become assistant to **J. Carlisle MacDonald,** assistant to the chairman of the Board of Directors of United States Steel Corp. in New York, who, for the chairman of the Board of Directors, exercises general direction of public relations activities of the corporation and its subsidiary companies. The appointments are effective February 16. Mr. McLaine has been in charge of the public relations activities in the Washington office of United States Steel Subsidiaries. Mr. Myers has been on the public relations staff of United States Steel Corp. of Delaware in Pittsburgh. Mr. Camp has been director of public relations, Pittsburgh district, Carnegie-Illinois Steel Corp.

• •

George Stevenson, sales engineer for the American Meter Co. for the last 14 years, has been appointed assistant manager of the company's Pacific Coast factory and sales service with headquarters in Los Angeles, Calif. After attending California Teachers' College, Mr. Stevenson joined the office force of the company's branch in San Francisco. In 1930 he became general office clerk and six years later was appointed sales engineer and transferred to Los Angeles. Mr. Stevenson is a member of the American Gas Association, the Pacific Coast Gas Association, the California Natural Gasoline Association, and the Southern California Meter Association and has served on various committees of these associations.

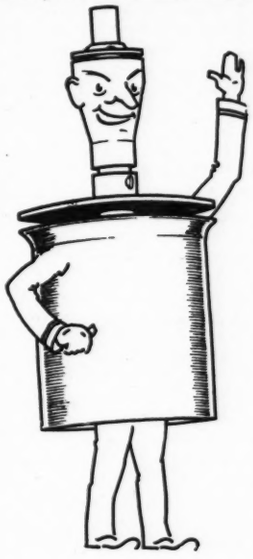
• •

Herman E. O. Dembke, manager of the Williamsburgh branch, Brooklyn (N. Y.) Union Gas Co., was recently honored on having completed 50 years in the company's employ at an informal party. A sizable defense bond was presented to Mr. Dembke as a token of esteem from his fellow employees. Having entered the company as a clerk in 1892, Mr. Dembke served the entire half-century at the Williamsburgh branch. He was advanced to chief clerk in 1910 and was made manager in 1924, succeeding his brother, the late **Hugo O. A. Dembke.**

• •

Elmer L. Ramsey, supervisor of customers advisers department of Laclede Gas Light Co., St. Louis, Mo., since 1936, has been advanced to the position of manager of customer relations, it has been announced by **L. W. Childress,** president, and **Alfred Hirsh,** general superintendent of the company.

In his new position, Mr. Ramsey will take over the management of the collection and credit department, customers service, and telephone division, and will direct matters affecting customer contacts in the customers accounting and cashiers division.



"SPECIFY
John Zink
Floor Furnaces
for
Defense Housing"

WHY?

1. Five sizes from which to choose.
2. Immediate shipment.
3. Easy to install and operate.
4. Fewer service calls—Install them and forget them.
5. Durable—Made of 18 and 22 gauge steel.
6. Guaranteed and approved.

JOHN ZINK COMPANY

4401 South Peoria Avenue
TULSA, OKLAHOMA

342 Madison Avenue
NEW YORK, N. Y.

BUTANE-PROPANE *News*—1709 West Eighth St., Los Angeles, Calif.

Keep abreast of the fast-growing
L. P.-GAS Industry!
Enter my subscription to start at once.

BUTANE-PROPANE *News*

for 3 Years at $2.50

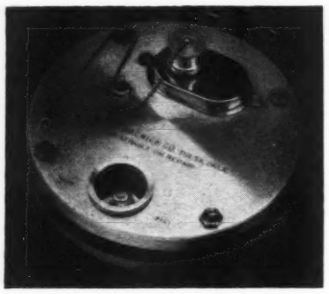
SUBSCRIPTION RATES: United States, Mexico, Cuba, South and Central American countries (in advance), three years $2.50; all other countries, $3.00 per year.

Name.....Position.....
Company.....
Address.....
City.....State.....

☐ Check enclosed ☐ Send bill

STILL THE SAME LOW PRICE

and the same HIGH QUALITY



MACNICK CHART CLOCKS

$9.50 Each

24-hour clock complete with adapter and winding key.

●

One Macnick Chart Clock Gives TEN ROTATION SPEEDS

Interchangeable converter gears for one turn of the chart in 2, 3, 4, 6, 8, 12 or 24 hours, or 2, 3, or 7 days $3.50 each.

●

Macnick Chart Clocks fit practically all recording instruments using circular charts. Interchangeable converter gears are installed without removing clock from instrument. Clock is hermetically sealed against dust, moisture, corrosive gases. Runs eight days on one winding. CUT YOUR CLOCK INVENTORY, reduce maintenance expense, get more service for your money with DEPENDABLE Macnick Chart Clocks. Order one today —send priority number and state make and type of instrument.

Send for Bulletin No. 104-A

AMERICAN RECORDING CHART CO.

3113 E. 11th St., Los Angeles, Calif.
512 S. Lansing Avenue, Tulsa, Okla.

Simultaneously with Mr. Ramsey's appointment came the announcement that **Charles L. Digiovanni,** assistant supervisor of the customers advisers, had been promoted to supervisor, and that **Owen Shannon** had been appointed supervisor of the collection and credit department.

Mr. Ramsey joined the company in 1932, as a special clerk. He later took a position in the house heating department and for a short time assisted with employee training courses. He was chosen for the office of supervisor of the customers advisers when that department was organized.

Mr. Digiovanni became an employee of the company in 1921 in the sales department of the Laclede Power & Light Co. He was later transferred to the adjustment department of the gas company and was transferred to the customers advisers as assistant supervisor in 1936.

Mr. Shannon joined Laclede in 1906, as a clerk in the bookkeeping department. He later was made a ledger keeper and was transferred to the collection department. He was then advanced to divisional supervisor under the late **James Noonan.**

• •

Appointment of **T. T. Arden** as vice president and general manager of Grayson Heat Control, Ltd., Lynwood, Calif., a division of the Robertshaw Thermostat Co., largely engaged in defense activities, is announced by **John A. Robertshaw,** president of the parent company. Mr. Arden has long been identified with the industry. After graduating from the University of Illinois, he went with the Ruud Manufacturing Co. of Pittsburgh, Pa. Subsequently he was made general sales manager of Milwaukee (Wis.) Gas Specialty Co., and from there became sales manager of the American Thermometer Co. of St. Louis, Mo. Shortly after the acquisition of the American Thermometer Co. by the Robertshaw Thermostat Co., Mr. Arden was made sales manager of both companies, and he also supervised the sales of Grayson Heat Control, Ltd.

T. T. ARDEN

• •

R. L. Fletcher, vice president, Providence (R. I.) Gas Co., has been appointed chairman of the Committee on Domestic Gas Research, according to an announcement by **George S. Hawley,** president of the American Gas Association. Mr. Fletcher succeeds **F. J. Rutledge.** A graduate of Massachusetts Institute of Technology, Mr. Fletcher is a director of the American Gas Association, a past president of the New England Gas Association, a past president of the Guild of Gas Managers, a member of the Society of Gas Lighting, the Eastern States Blast Furnace and Coke Association, the A. S. M. E., and the Providence Engineering Society. President Hawley has appointed the following men to serve with Mr. Fletcher on the Domestic Gas Research Committee: **Frank H. Adams,** Surface Combustion Division, General Properties Co., Inc., Toledo, Ohio; **F. M. Banks,** Southern California Gas Co., Los Angeles, Calif.; **R. G. Barnett,** Portland (Ore.) Gas & Coke Co.; **E. J. Boothby,** Washington (D. C.) Gas Light Co.; **H. H. Cuthrell,** The Brooklyn (N.Y.) Union Gas Co.; **Henry O. Loebell,** New York, N. Y.; **Christy Payne, Jr.,** The Peoples Natural Gas Co., Pittsburgh, Pa.; **H. P. J. Steinmetz,** Public Service Electric & Gas Co., Newark, N. J.; **Charles H. Wiley,** The Laclede Gas Light Co., St. Louis, Mo., and **W. F. Wright,** The Dallas (Texas) Gas Co.

• •

J. J. DELANEY

K. C. TOMLINSON

Announcement has been made that the Board of Directors of the American Meter Co., has appointed **K. C. Tomlinson** as vice president of the Reliance Regulator Corp., a subsidiary of the American Meter Co. Mr. Tomlinson will retain his duties as manager of the Pacific Meter Works, one of the company's branches, and will maintain headquarters in San Francisco. Mr. Tomlinson joined the Pacific Meter Works in 1926. Prior to that time he was gas engineer for the California Railroad Commission and Portland (Ore.) Gas & Coke Co. At the same meeting, the Directors appointed **J. Jack Delaney** general manager of the Reliance Regulator Corp. Mr. Delaney will be in charge of sales and operations for the company and will be located at the company's plant in Alhambra, Calif. Mr. Delaney joined the Reliance Co. in 1930. Prior to that time he was gas engineer for Wescott & Greis and General Petroleum Corp., Los Angeles, Calif.

• •

William F. Huff, 46, of Glendale, Calif., has been appointed director of the newly-created materials division in the Office of Petroleum Coordinator for National Defense by Petroleum Coordinator for National Defense **Harold L. Ickes.** Mr. Huff served in the United States Army in World War I after which he was connected with the National Supply Co. as assistant sales manager and western export sales manager and in 1935 became vice president of the Better Rubber Co. In 1938, he went to the Petroleum Equipment Co. as manager of tubular sales, remaining with that firm until coming to the Coordinator's Office. The appointment of **James E. Pew,** of Charleston, W. Va., as assistant to **Paul M. Raigorodsky,** chief of the Natural Gas and Natural Gasoline Section of the Office of Petroleum Coordinator, has been announced.

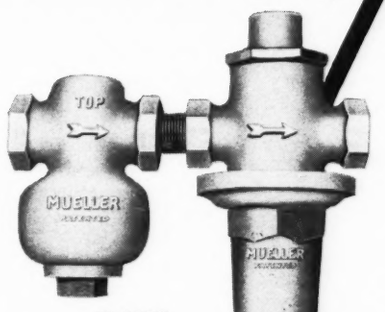
• •

Appointment of **Charles L. Harding** as Counsel and Acting Director in Charge for District No. 1, embracing the eastern states, has been announced by the Office of Petroleum Coordinator. Mr. Harding will act as legal advisor to the Coordinator's industry committees in this district. His headquarters will be in the district headquarters of the OPC in New York City. He was manager of the marketing division of Shell Oil Co.'s legal department for the territory east of the Rocky Mountains. He became a member of Shell's legal department on the West Coast in 1933.

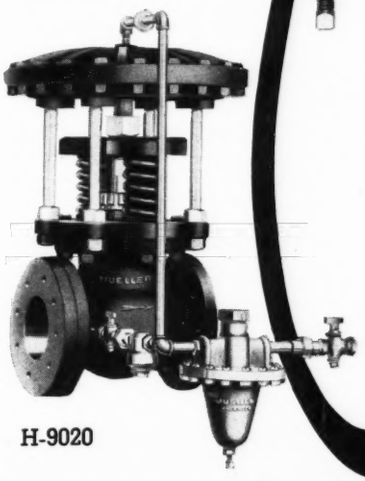
• •

Capt. E. Richard Keller, former assistant manager, publicity department, The Cincinnati (Ohio) Gas and Electric Co., subsidiary of Columbia Gas & Electric Corp.,

MUELLER PROVIDES ACCURATE REGULATION



H-9000



H-9020

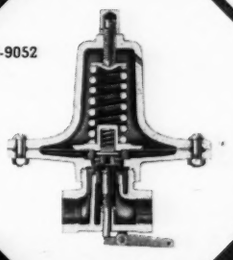
Mueller pressure reducing and regulating valves are carefully designed to give accurate and dependable service. Seat openings are ample to provide full volume and the delivery pressures are held to close limits by the large diaphragms. Although the regulators are ruggedly built, the various working parts can easily be replaced, if necessary, without removing the regulator from the line.

The H-9000 is furnished in sizes ¼" to 2½" and the H-9020 in all sizes up to 12" inclusive. . . . If you haven't all the facts write NOW to Dept. G-31.

MUELLER CO.

DECATUR, ILL. ★ LOS ANGELES, CALIF.

H-9052



Only a Mueller Relief Valve has the Auxiliary Spring Seating Principle. This prevents imbedded discs, and provides accurate and instant relief from excessive pressures. Ask about it.

Are You Satisfied with your PURIFICATION COSTS?

Connelly IRON SPONGE

Here's what users say.

"We are getting better service from Iron Sponge than we ever thought possible."

"Your purifying materials stand up the best of any I have ever used and always revive perfectly."

"The come-back properties of your material have been mighty near remarkable."

"The material has stood up so well that it has been necessary to replace but very little."

Made in U. S. A.
100% American Materials

Every day more and more gas companies are demonstrating the remarkable economy of Connelly Iron Sponge. This remarkable product, of extra high capacity, is guaranteed to meet every requirement efficiently and economically. Its unusually long life, remarkable revivifying properties and low maintenance expense reduce purifying costs to the absolute minimum.

Don't be too sure your costs can't be lowered. By a searching analysis of requirements, Connelly engineers have recommended changes resulting in savings as high as 50%.

Consult Connelly Today

Send a sample of your used material and give us an idea of the required capacity. We will gladly make an analysis and submit unbiased recommendations without cost or obligation.

CONNELLY IRON SPONGE & GOVERNOR CO.
CHICAGO, ILL. ELIZABETH, N. J.

Wilmington, Del., reported January 19 for active duty in the United States Army. In military service since 1919 when he enlisted in the National Guard, Capt. Keller completed a one-year tour of active duty last October during which he was Captain in the Air Corps, serving as publicity officer, U. S. Army Aviation Cadet Examining Board.

• •

D. E. Farmer has been named superintendent of the utilization bureau of Portland (Ore.) Gas & Coke Co., according to an announcement by **R. G. Barnett,** vice president and general manager of the company. Mr. Farmer succeeds **C. R. Miller,** superintendent of the bureau for 25 years, who died January 19. A 22-year veteran of the company, Mr. Farmer joined the utility in 1919 as a clerk in the utilization bureau. For three years he was assistant to **R. M. Conner,** now head of the testing laboratories of the American Gas Association. For a year he was assistant to **Kenneth C. Tomlinson,** now manager of the Pacific Meter Works, who was then chief chemist of the gas company. He was later named supervisor of the meter department and utilization bureau dispatcher.

D. E. FARMER

Mr. Farmer was advanced to chief clerk in the department in 1935, which position he held until his recent advancement. He served as a member of the Meters Committee of the Pacific Coast Gas Association for several years and as its chairman for one term. **Fred J. Harkins,** an 18-year veteran of the gas company, was named chief clerk to succeed Mr. Farmer.

• •

John R. Hoover, Akron, Ohio, has been appointed manager of synthetic sales of The B. F. Goodrich Co., it is announced by **V. I. Montenyohl,,** vice president. Mr. Hoover succeeds **Dr. H. E. Fritz,** who was recently named company director of research. He had been manager of rubber-lined equipment sales since 1935 and is succeeded in that post by **Herman C. Klein.** Mr. Klein had been sales engineer in the department.

• •

F. F. Doyle, chairman of the transmission committee of the Pacific Coast Gas Association, has announced the following appointments: **W. R. Schneider,** sponsor, Pipe Protection; **L. F. Reetz,** sponsor, Large Volume Measurement, and **F. E. Wilson,** sponsor, Pipe Lines.

• •

Edward Lindsay, former display manager of the Seattle (Wash.) Gas Co., is now with the Seims Drake Puget Sound Bridge and Dredge Co. in charge of the specifications department.

• •

Edwin A. Jones is now development engineer of Majestic Mfg. Co., St. Louis, Mo., in which position he has charge of the general design of appliances for the company. Mr. Jones has been associated with the gas industry for many years.

Announcement has recently been made by Standard Oil Co. of California of the appointment of former treasurer, **George J. O'Brien,** as assistant to President **C. D. Collier,** and representative of the directorate in Los Angeles. Replacing Mr. O'Brien as treasurer is **J. H. Tuttle,** a vice president, who will assume the duties of treasurer of the company in addition to his regular duties as a vice president.

• •

L. C. Rhodes has been appointed manager of the Pacific Coast territory for The Sullivan Machinery Co., Michigan City, Ind., succeeding the late **Perry W. Olliver.** Mr. Rhodes has been district manager of the Spokane-Butte territory. He has served the company in Utah, Minnesota, British Columbia and Northern Ontario.

• •

Arthur J. Anderson, formerly manager of Northwest Cities Gas Co. at Astoria, Wash., has been transferred to Walla Walla to replace **E. R. Lane** who has joined the colors. **Don E. Wolf** will replace Mr. Anderson at Astoria and **Osmon T. Nelson** has been appointed acting manager at Lewiston.

• •

W. B. Head, Jr., has been named assistant manager of the Houston, Texas, division of the United Gas Corp. Mr. Head, who has been in the public utility business for 15 years, has been assistant to the vice president and general manager of the company for the last 14 months.

• •

J. H. Lewis, manager of the San Francisco office of Robertshaw Thermostat Co. and Grayson Heat Controls, has been transferred to the Los Angeles office. The San Francisco office will be closed for the duration.

• •

Roy E. Richards, gas superintendent of the Central Arizona Light and Power Co., Phoenix, Ariz., has joined the colors as Lieutenant-Colonel in the Signal Corps. After attending a special school at Harvard University, he will be stationed in the East.

• •

Kenneth Helm, formerly a service man for the Gas Service Co., Beloit, Kan., has been promoted to the position of manager of the company's office at Mankato. He will succeed **Howard Ayers,** who resigned recently.

• •

Ed C. Pfenning, manager of the Gas Service Co., Hutchinson, Kan., has been named chairman of the Hutchinson Tire Rationing Council by Mayor Willis Kelly of Hutchinson.

• •

J. E. Smith has been appointed subdistrict manager for the Community Natural Gas Co. at Van Alstyne, Texas. He succeeds **Ivy W. Powell,** who has been transferred to Denison, Texas.

• •

Dr. Philip T. Stroup of the Aluminum Co. of America's Research Laboratories, has been appointed a member of the American Gas Association Treating and Melting Committee.

SEMET-SOLVAY ENGINEERING CORPORATION

Blue Gas Plants — Gas Purifiers
Water Gas Machines — Condensers
Washer Coolers — Waste Heat Boilers
Naphthalene Scrubbers — Producer Gas Plants

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Every **PITCO** *Frialator*

***Connected to Your Mains . . . Means a* LARGER METER-READING *for* YOU!**

. . . A STEADY, DEPENDABLE COMMERCIAL LOAD

Here's an impregnable defense against competition! When you install a PITCO FRIALATOR, it's a completely *new* factor . . . an immediate contribution to your commercial load.

And to your customers, also, the PITCO FRIALATOR is a powerful force for combating competition. Everybody who serves food to the public will quickly appreciate the outstanding features of the PITCO FRIALATOR . . . features which will enable them to produce *better, more salable deep-fried foods,* at minimum cost!

The constant, exact temperature-control of the PITCO FRIALATOR retards breakdown of the frying-fat! Construction of the PITCO unit retards breakdown and upholds quality of food . . . eliminates the burning of sediment. Savings in fat *alone* will quickly pay for the installation . . . and the improved quality of product pushes sales UP while production costs come DOWN.

DO YOUR PART . . . CONSERVE FAT

Every progressive Gas Executive is invited to write for information on the cooperation which we extend to Gas Companies.

J. C. PITMAN & SONS, INC., 711-719 Broad Street, Lynn, Mass.

Obituaries

O. E. Dustman

O. E. DUSTMAN

O. E. Dustman, 56, Southern California manager of the Ralph N. Brodie Co., Los Angeles, died February 3 of a heart attack.

Mr. Dustman was widely known in the petroleum and natural gas industry, having headed the Los Angeles office of the Brodie Co. for more than nine years.

• •

W. L. Shively

Walter L. Shively, for many years a member of the research staff of the Koppers Co. and recently associated in like capacity with the Boston Consolidated Gas Co., died recently. A graduate of the Carnegie Institute of Technology, Mr. Shively is known to the American Gas Association for such developments as gas dehydration, oil fogging and research projects on vapor phase gum and other distribution problems. He served on the A. G. A. Chemical Committee and was also active in the New England Gas Association where he was director of the Operating Division and served on the Production Research and Gas Conditioning Committees.

• •

Harry C. Dean

Harry C. Dean, 56, a 33-year veteran of the gas industry, died recently. A graduate of the University of Pennsylvania, Mr. Dean was first employed in the distribution department of the Philadelphia (Pa.) Gas Works Co. From 1915 to 1919 he was in charge of the operation of various gas plants in the United Gas Improvement system including those at Michigan City, Ind.; Nashville, Tenn.; and Northern Liberties, Philadelphia, Pa. Later he took the position of plant designing engineer with the U. G. I. Contracting Co. and continued in this capacity until that company became a part of the United Engineers & Constructors, Inc.

• •

William B. Jones

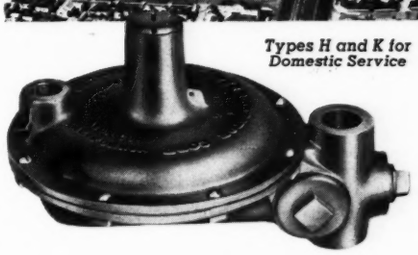
William Burrell Jones, 93, father of W. Alton Jones, president of Cities Service Co. of New York, died at his home in Webb City, Mo., shortly after midnight, February 1. A native of Clarkville, Tenn., Mr. Jones had lived in that community for 74 years, and was a pioneer farmer. He retired 25 years ago. W. Alton Jones flew to Webb City from Miami, Fla., on hearing of his father's death. Born on the Jones' farm, Alton Jones began his career with the Cities Service Co. in Webb City and rose to the highest executive position of the company.

• •

J. W. Fisher

James W. Fisher, 55, senior draftsman for The Cincinnati (Ohio) Gas and Electric Co., subsidiary of Columbia Gas & Electric Corp., Wilmington, Del., died Feb. 3 of a heart attack. Mr. Fisher joined the company in 1905 and prior to that time was with a gas holder construction firm.

Save service costs in extended areas—



Types H and K for Domestic Service

Reliance Regulator from the line. They are built that way to save time and expense.

Follow the smart gas companies that stick to Reliance Regulators to save time and money.

Reliance Regulators have been protecting the pocketbooks of gas companies for 32 years. When you install a Reliance Regulator you can forget it. The pressure in your lines may fluctuate, but the pressure at your customers' burners will be constantly correct. Even if you do have to service a job for dust or other cause, you can do it without taking a

REGULATORS YOU CAN RELY ON — RELIANCE — SINCE 1908 — TRADE MARK

Type HPR for Pressures up to 1000 P.S.I.

SEND FOR BULLETINS

RELIANCE REGULATOR CORPORATION

1000 MERIDIAN AVENUE, ALHAMBRA, CALIFORNIA

GAS—1709 W. 8th Street, Los Angeles, California

Yes! SEND ME GAS

for 3 Years at $2.00

SUBSCRIPTION RATES: United States, Mexico, Cuba, South and Central American countries (in advance), three years $2.00; all other countries, $3.00 per year.

Name..... Position.....

Company.....

Address.....

City..... State.....

☐ Check enclosed ☐ Send bill

"I'm Still Working..Thanks to My Hard Boiled Hat"

Says an oil company worker: "A three man rivet buster was on one side of the tank, and I was on the other with a broom. The rivet head sheared off, glanced from the frame and hit my 'hard boiled' hat."

SAVE MONEY on protective hats with Bullard's simplified stock control system. Ask for new folder: *"How to Select Head Protection at a Saving."*

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HARD BOILED HATS

E. D. BULLARD COMPANY
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Everything BULLARD in Safety
Please send me new free folder describing: *"How to Select Head Protection at a Saving."*
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in the truest sense of the word-

looking after every detail of your visit-attending to your needs as quickly, efficiently and unobtrusively as possible. service and hospitality are the watchwords at the metropole. popular priced dining room. rates from $1.50; with bath from $2.50. modern garage adjacent.

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A. G. A. Laboratories Begin Immersion Heating Research

JOHN W. BATTEN, chairman of the Committee on Industrial Gas Research of the American Gas Association, announces that the Committee has organized a new industrial gas research project to cover a thorough investigation of the possibilities of immersion tube heating of liquids with gas in industrial and commercial applications. The project has been assigned to the A. G. A. Laboratories, and work has recently been started.

Although the immersion tube method of heating liquids has in the past been used in factory heating processes, is now being installed in war production factories, and is incorporated in certain types of commercial gas appliances, notably deep fat fryers, scientific data on which to base correct engineering designs are lacking. Furthermore, determination of the optimum performance of immersion tubes operating under different conditions offers a broad field for constructive research, as does also the subject of minimum sizes, that will prove practical.

A complete working outline covering this project has been approved by the Committee, and will be followed by the Laboratories. The working outline is subject to periodic review by the Committee as the research work progresses, and will be altered from time to time as the results of work in each step of the program seem to indicate advisable.

Industrial and commercial gas men in general have indicated to the Committee their interest in this research work, and a group of equipment manufacturers in these fields have placed their shops at the disposal of the Laboratories in connection with any field work required during the life of the project.

This is the 47th research project sponsored by the Committee on Industrial Gas Research under authorization of the Executive Board of the American Gas Association.

■ ■

California Companies Adopt Payroll Deduction Bond Plan

Following the recommendations for the U. S. Treasury Department, the Southern California and Southern Counties Gas Companies have initiated a voluntary payroll deduction plan for the purchase of Defense Savings Bonds (Series E). This was done following a preliminary survey which indicated that nearly half the companies' employees would participate. Under the plan, employees authorize regular deductions of $1.00 or more from their pay checks. As soon as accumulations total the price of a bond the company arranges for its purchase and delivery to the employee. The plan is flexible in that an employee can discontinue participation or change the amount of his authorized deduction at any time.

■ ■

Minneapolis-Honeywell Ads Feature Defense Housing

The 1942 advertising campaign of Minneapolis-Honeywell Regulator Co., manufacturer of controls, and its subsidiary, The Brown Instrument Co. of Philadelphia, manufacturer of recording and controlling instruments, will appear in seven consumer publications and over 60 trade and professional magazines. The theme this year will be directed to defense housing.

The policy inaugurated over two years ago for educating the public on the value of automatic heating will be continued by Minneapolis-Honeywell in its consumer advertising. The comfort and economy of automatic heating controls, even in low budget defense housing, will be emphasized.

In over 30 trade and professional publications reaching the entire automatic heating trade, the architect, and the engineer, Minneapolis-Honeywell will feature the importance of obtaining priorities in order to get business, and will at the same time explain the war production activities of the company. The over-all theme is, "We are still making controls in spite of large scale war production for the government. They are available to all with priorities."

■ ■

Border Pipe Line Co. Would Export Gas to Rosita, Mexico

THE Federal Power Commission has announced its receipt of an application by the Border Pipe Line Co., Houston, Texas, for authority to export natural gas from the San Salvador field in Hidalgo county, Texas, for use by the American Smelting and Refining Co. in its zinc smelter at Rosita, Coahuila, Mexico. The applicant proposes to sell the gas to American Smelting and Refining Co., about 40 miles northwest of Laredo, Texas, from which it would be transported by the purchaser to the Rosita plant.

The zinc producing company's gas requirements are estimated to be 10,000,000 cu. ft. of gas per day which would be sold, under a contract between the two parties, at the rate of 5¢ per thousand cubic feet for gas having a heating value of 1000 B.t.u. per cu. ft.

The applicant states that at present gas manufactured from coal and coke is being used in furnaces at the Rosita smelter, and that the natural gas proposed to be exported will increase zinc production at the smelter from approximately 2400 to 4800 tons per year, as well as release approximately 4000 tons of coke per month for steel production in Monterrey, Mexico. If this coke production is not released to the Monterrey Steel Co., the application adds, it will be necessary to construct coke ovens requiring a two-year construction period, as there is no other source in the Republic of Mexico from which coke can be obtained to meet increased steel production at Monterrey.

■ ■

Pennsylvania Gas Co. Buys Warren County Pipe Lines

Sale of Warren County Gas Co. pipe lines in Sheffield, Saybrook and Tiona, Pa., to Pennsylvania Gas Co. has been completed and more than 400 consumers in these communities are now being served by the new operator. Warren County Gas Co. was a subsidiary of Kane Gas Co.

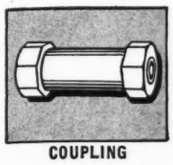
Under terms of the transaction, the purchaser took over several miles of street pipe lines in the three communities and a 4-in. pipe line which extends from Sheffield to the city of Tiona.

■ ■

University of Oklahoma Has Natural Gas Research Unit

Establishment of a new research institute project in the field of natural gas engineering at the University of Oklahoma, Norman, has been announced by Homer L. Dodge, director of the Oklahoma Institute of Industrial Research.

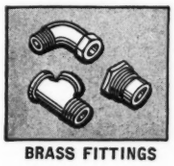
Mr. Dodge said that research at Norman will be undertaken principally in the field of chemical engineering. The new project comes to the University as a result of the reputation which the college of engineering has attained in the field of natural gas engineering.



COUPLING

SERVICE "ELL"

SERVICE "TEE"



BRASS FITTINGS

These TIME AND TROUBLE SAVERS

NORMAC COUPLINGS, sleeves and fittings were designed right from the very start for modern gas distribution needs. That is why they have become the universal favorites of gas utility men all across the country. Their exclusive features save time and trouble and their superior construction assures freedom from common failures and annoyances.

● They are available in a complete range of sizes all made from air furnace malleable iron and every one provides greater wall thicknesses than the pipe on which it is used. Send for new complete illustrated catalog.

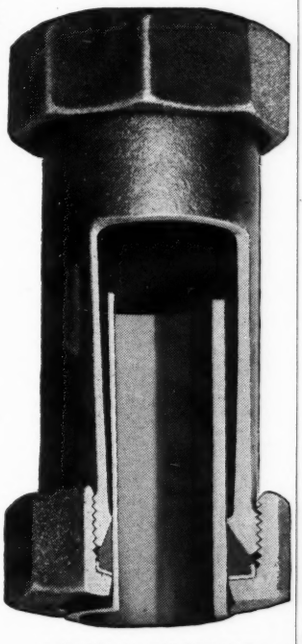
NORMAC GAS DISTRIBUTION EQUIPMENT

★ **Gives greater ease of stabbing . . . . . .**

★ **Provides maximum deflection, complete confinement of rubber . . .**

★ **Possibility of rubber flow is reduced to an absolute minimum . . .**

★ **Full coupling depth in all sizes and types . . .**



NORMAC COUPLING

NORTON-McMURRAY MANUFACTURING COMPANY

Manufacturers of the "NORMAC" Line of Gas Distribution Equipment

COMPRESSION-END METER BARS • • SLEEVES • • COMPRESSION-END COCKS • BELL JOINT CLAMPS • • • COUPLINGS • • • SERVICE TEES and ELLS •

39 SOUTH LA SALLE STREET • CHICAGO, ILLINOIS

50 YEARS OF SATISFACTORY Service

A Half Century of Service is a record of achievement for which any manufacturer can well be proud. Reynolds has enjoyed Fifty Years of Service and Leadership in the Gas Control field. Many of the "Little Giants" installed in the last century are still giving efficient service.

REYNOLDS SERVICE REGULATORS

Reynolds build three models of Service Regulators—each designed to answer specific requirements in the industry.

★ Model 10—all parts accessible and interchangeable while in pipe line.

★ Model 20—working parts so accurate as to permit complete interchangeability in shop.

★ Model 30—has removable valve and orifice, and is made in either horizontal or vertical connections.

★ All three Models manufactured in either Spring or Dead Weight adjustment and with or without Mercury Seal.

No. 1 size Models 10 and 30 made with diaphragm operated relief valve in top casting.

Representatives

Eastern Appliance Co.
Boston, Massachusetts

2nd Unit:
Santa Fe Building
Dallas, Texas

Branch Offices

423 Dwight Building
Kansas City, Missouri

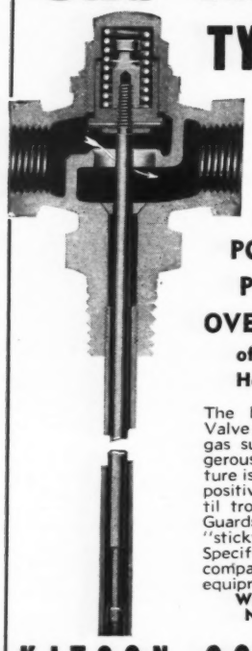
Wm. A. Ehlers
No. 268 Park Street
Upper Montclair, N. J.

REYNOLDS GAS REGULATOR CO.

Anderson, Indiana, U. S. A.

GAS CONTROL SINCE 1892

KITSON
"DEFENDER"
EMERGENCY SHUT-OFF
GAS VALVE
TYPE IHF



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A. G. A.
APPROVED
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POSITIVELY
PREVENTS
OVERHEATING
of Gas Water
Heater Tanks

The Kitson DEFENDER Valve shuts off the main gas supply before dangerous water temperature is reached . . . Gives positive protection, until trouble is remedied. Guards against possible "sticky" thermostats . . . Specified by many gas companies as standard equipment.

Write for Details
No Obligation

KITSON COMPANY
1500 Walnut St. Philadelphia, Pa.
A MEMBER OE THE WELSBACH GROUP

Check IN AT A DeWITT OPERATED HOTEL

In Cleveland
THE HOLLENDEN
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In Lancaster, O.
THE LANCASTER
In Corning, N. Y.
THE BARON STEUBEN

THEO. DeWITT PRESIDENT
DeWITT OPERATED HOTELS

PRODUCTS

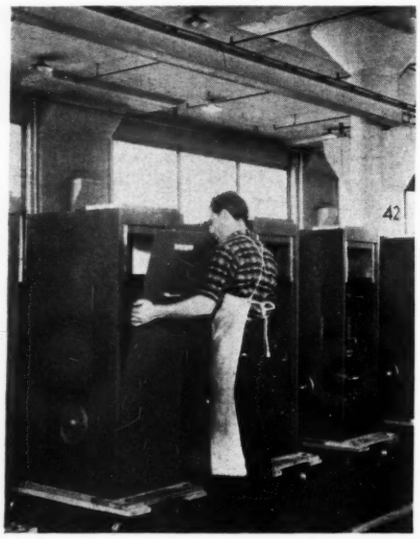
Warm Air Conditioner

General Electric Air Conditioning and Commercial Department, Bloomfield, N. J.

Model: G-E gas-fired packaged warm air conditioner, Type LG-C.

Application: For Defense Housing.

Description: Developed originally for civilian use, this "packaged" merchandise has been placed in production for defense housing. The new units, available in three gas-fired



models, are completely factory wired and assembled. They are extremely compact, and have been approved for close-quarter installations. Output ratings of the three gas-fired models are 48,000 B.t.u. per hr., 72,000 B.t.u. per hr., and 96,000 B.t.u. per hr. Replaceable filters remove dirt and dust. An automatic fan control prevents circulation of cool air at the start of the heating cycle. The surfaces have gasketed joints, cutting the possibility of flue gas leaks and assuring safe operation. A limit switch stops the main gas supply should the unit overheat. A gas pressure regulator control maintains a relatively constant gas pressure to the main burners, which increases efficiency. None of the units are now available for general civilian purchase but the furnaces are being turned out to fill defense housing orders.

■ ■

Mixing Chamber

American-LaFrance-Foamite Corp., Elmira, N. Y.

Model: "Evertite" Foam Mixing Chamber.

Application: Designed especially for easy installation on modern oil storage tanks of the pressure type. Its purpose is to provide a simple and efficient method of applying a blanket of fire-smothering foam to burning oil surfaces.

Description: An inspection cap can be removed, and a sealing diaphragm inspected, without releasing tank pressure. The vapor-proof glass diaphragm is installed so as to prevent vapors in oil storage tanks from entering the body of the mixing chamber, from entering and condensing in chemical solution lines, or from escaping to the air when bottom or top plate, or inspection cap, are removed. A separate adapter flange is provided for mounting over foam opening in oil tank shell. Flange surface adjoining tank shell is concave.

■ ■

Liquid Coating for Glass

Roxalin Flexible Finishes, Inc., Elizabeth, N. J.

Model: "*Roxaneal*" *Glass Protector.*

Application: A Liquid Coating to Prevent Flying Glass During Air Raids—for defense plants, public buildings, schools and hospitals and private homes.

Description: A new glass protector, water-white, transparent liquid that prevents broken glass from flying. It is not claimed to stop glass from fracturing, but tests have proved that it will keep broken glass in place thus preventing dangerous glass splinters from flying, states the manufacturer. Roxaneal is applied to the interior of clean glass, thus windows may be cleaned with mild soap solutions without affecting the strength of the protective film. Roxaneal is easily removed by peeling it off with a razor blade, or by washing it off with solvents.

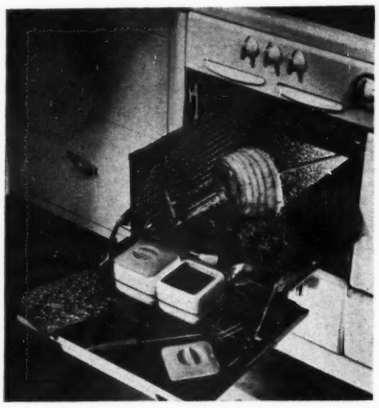
■ ■

Broiler Barbecue

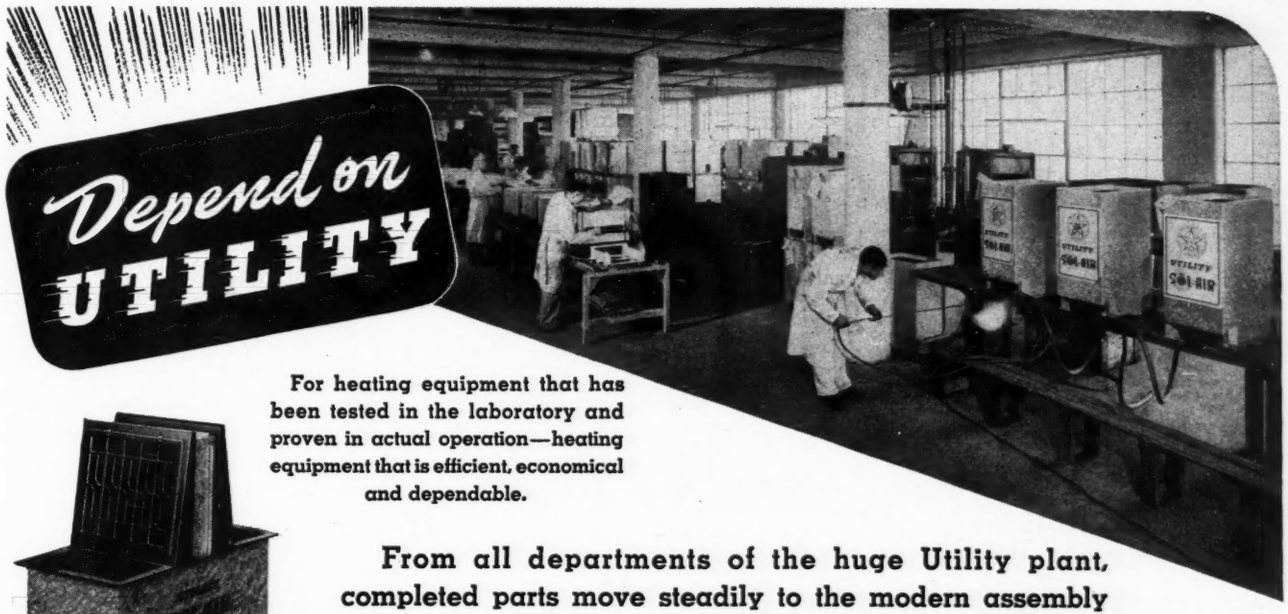
Geo. D. Roper Corp., Rockford, Ill.

Model: "Bar-B-Q" Broiler.

Description: The new Roper broiler "Bar-B-Q" consists of complete equipment for barbecuing in the broiling oven. A skewer with support can quickly be placed in position, all ready to go. Used in combination with the "Glo" broiler burner of the modern Roper gas range, it provides a means of barbecuing conveniently and ef-

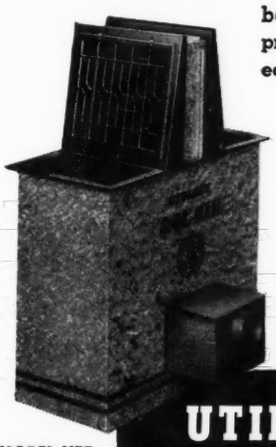


fectively. The "Glo" burner supplies a penetrating infra-red heat ideal for the barbecuing process that is penetrating and up to 30% faster. It permits charring meats, if desired. An easy-to-use device, the broiler "Bar-B-Q" may be quickly attached or removed from the broiler. The long skewer that will take 2½ lb. chickens or a large piece of meat—and a skewer support.



Depend on UTILITY

For heating equipment that has been tested in the laboratory and proven in actual operation—heating equipment that is efficient, economical and dependable.



MODEL HFD DUAL REGISTER FURNACE

From all departments of the huge Utility plant, completed parts move steadily to the modern assembly lines, where Utility Heating Equipment is assembled, inspected and tested by capable, experienced workmen.

MANUFACTURERS OF FORCED-AIR BASEMENT AND CLOSET FURNACES, FLOOR AND DUAL REGISTER FURNACES, CIRCULATING HEATERS AND UNIT HEATERS

UTILITY FAN CORPORATION

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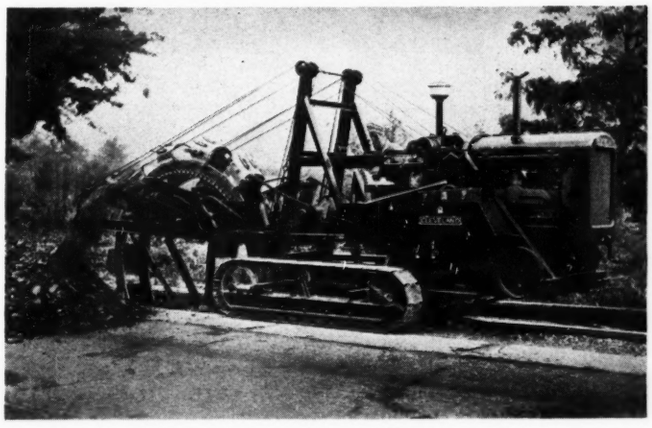
5

Thoroughbreds In Every Respect—

"CLEVELANDS"

Assure Maximum Returns on Your Investment Because of Their

SPEED - ENDURANCE - DEPENDABILITY



The CLEVELAND "BABY DIGGER"—Model 95

"MODEL 95"—The Famous "BABY DIGGER" For All-round Gas Trenching

Here is the famous "BABY DIGGER," the pioneer small trencher—known and used almost universally throughout the gas industry. Small in size, but big in performance . . . light in weight—tough and dependable . . . compact and portable—yet extremely fast.

Its wide range of cutting widths and all-round value have made the "MODEL 95" supreme as a general purpose gas company trencher.

"MODEL 75"—A Still Smaller Trencher for Service and Small Diameter Pipe

Again "CLEVELAND" solves the problem.

Here's a still smaller, lighter and more inexpensive machine for digging smaller diameter lines, house services, etc.

Small companies with limited programs—as well as larger companies who use it to supplement their larger trenchers, have found the "MODEL 75" ideal. Weighs only 7,000 lbs.—it is but 45" wide.

The "MODEL 75" is the last word in portability.

CLEVELAND "MODEL 75"

THE CLEVELAND TRENCHER COMPANY

"Pioneer of the Small Tractor"

20100 St. Clair Avenue **Cleveland, Ohio**

A. G. A. Testing Laboratories Issue Directory for 1942

THE American Gas Association Testing Laboratories have issued their Directory of Approved Gas Appliances and Listed Accessories for January, 1942.

One of the major changes has been relisting of equipment certified for liquefied petroleum gases as well as for natural and manufactured gases. When models had been tested and approved at the same ratings for all these gases it was possible to eliminate their repetition under appropriate headings. In their place a statement, "Same model numbers and types as indicated above for natural and manufactured gases," has been added. This change serves to clarify the directory.

Another change which deserves special mention was first incorporated in the Oct. 1, 1941, directory. Domestic gas ranges were classified for the first time therein according to the manner in which they were tested at the Laboratories to insure safe and satisfactory wall temperatures. Classified under four major types (uninsulated, insulated, flush-to-wall, and combination) distances at which they may be spaced from combustible side walls and back are given as a guide for their installation in consumers' homes.

The current directory represents an increase of nearly 15% over the corresponding January, 1941, issue. Totaling 313 pages, it is the largest January issue published by the Laboratories.

■ ■

Standard Oil Co. Plans to Drop Gas Utility Properties

The Standard Oil Co. of New Jersey plans to divest itself of its stock ownership in its nautral gas utility properties after the Security and Exchange Commission's ruling February 5 that the oil concern is a holding company within the meaning of the Public Utility Company Act, according to W. S. Farish, president.

Four subsidiaries are involved: the East Ohio Gas Co., Cleveland, Ohio; the River Gas Co., Marietta, Ohio; the Hope Natural Gas Co., Clarksburg, W. Va., and the Peoples Natural Gas Co., Pittsburgh, Pa. These companies are 100% controlled by Standard Oil Co. (N. J.) and it is believed their stocks will be distributed pro rata among Standard Oil (N. J.) stockholders as was done when the company disposed of its ownership in the Mission Corp. a few years ago.

Total net income of the four gas subsidiaries has ranged from $10,000,000 to $14,000,000 annually in recent years.

■ ■

Panhandle Eastern Line Is Delayed in Michigan

The 45-mile, 12½-in. natural gas transmission line being built by Panhandle Eastern Pipe Line Co. to Flint, Mich., may not be completed before April 1. Original completion date was scheduled for February 15. Delays have been caused by inability to secure delivery on pipe and by bad weather conditions.

The 45-mile line into Flint from Consumers Power Co.'s Milwaukee, Mich., gas terminal is the first link of a proposed 250-mile pipe line program to enlarge natural gas facilities in Michigan. When the new system is completed Flint, Pontiac, Jackson, Kalamazoo and other war industry cities will draw an estimated 70% of their gas needs from the Texas reserve and 30% from Michigan reserves.

At present two gangs are engaged on Panhandle Eastern's Michigan construction program. Work has started on the laying of the 20-in. pipe for the expansion of the system which was planned last year.

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Standard Gas Equipment Sales Office at Baltimore

Standard Gas Equipment Corp., New York, N. Y., has announced that its general sales and advertising offices are now located at Baltimore, Md. However, the New York regional sales offices and display rooms will be continued at the former New York address, 18 E. 41st St.

This move centralizes all executive offices at the Baltimore plant at Bayard and Hamburg streets, according to Herbert C. Erhard, general sales manager. Robert E. Laffin will continue as head of the advertising department.

Girdler Corp. Builds Plant To Purify, Dehydrate Gas

The Girdler Corp., Louisville, Ky., is now constructing a plant to purify and dehydrate 25,000,000 cu. ft. of condensate-separator gas per day from the McKamie, Ark., field for the McKamie Gas Cleaning Co. of Arkansas. This is the first purification plant designed to produce a marketable gas from this extremely sour field.

The gas, which contains about 4500 grains of hydrogen sulphide per 100 cu. ft. and approximately 5% carbon dioxide, will be purified to pass the Bureau of Standards test for hydrogen sulphide. Incidental removal of carbon dioxide will increase the heating value of the gas. The dehydration feature has been added to prevent hydrate formation in the transmission system. The plant will be complete including steam and cooling water facilities.

A gasoline recovery plant will be erected along with the purification plant and later it is planned to add another plant to convert the recovered hydrogen sulphide to elemental sulphur, sulphuric acid or some other useful product.

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Gas Service Co. Sales Up $213,867 Over 1940 Figure

The Gas Service Co., Kansas City, Mo., new business department recorded the year 1941 as fourth best in the history of the company. The 1941 gross sales exceeded the amount of business obtained in 1940 by $213,867. The year 1940 had been the fourth best year in gross sales and installations.

Industrial sales gained 17.3% over 1940, the total M c.f. sales amounting to $29,165,560. Total gross appliance sales were $2,770,817, an increase of 8.4%, and actual 1941 gross sales of new appliances (not considering rental equipment) added to the lines totalled $2,749,615, an increase of 10.1% over 1940. Increase in domestic customers, 1941 over 1940, was 3.8%, and in industrial customers, 5.0%. Although total domestic sales decreased 6.2%, increased industrial sales brought the total domestic and industrial sales up 5.8% over 1940.

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Twenty Texas Wells Bought By Consolidated Utilities

The Consolidated Gas Utilities Corp., Oklahoma City, Okla., has purchased 20 gas wells in the Wheeler county, Texas, gas field and will turn the production into its natural gas transmission system.

E. C. Joullian, president, Consolidated Gas Utilities Corp., states that his company will construct a gathering system, consisting of 18 miles of 3-in. to 16-in. pipe to carry this gas from the wells to its transmission system. Increased demand for gas is the reason assigned for securing the additional supply.

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Southern Pipe Line Corp. Completes 19-Mile Line

The Southern Pipe Line Corp. has constructed 19 miles of gas pipe line from the Agua Dulce field to the Saxet field at Corpus Christi, Texas. The line consists of 14 miles of 10¾-in. pipe and 5 miles of 8⅝-in. pipe, all 41-lb. material. It has a capacity of 50,000 cu. ft. of gas daily and operates at a pressure of 1050 lbs.

GEORGE A. BURRELL

Gas Engineer

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